

Summary of responses from national survey sent out to all States for Waste to Worth Conference presentation *Nutrient Management Standards, Making Them Work Where We Work (April 3, 2013)* . (Green columns denote speaker at Waste to Worth Conference).

For questions regarding this table please contact Nichole Embertson (E: nembertson@whatcomcd.org; P: (360) 354-2025) or Erin Cortus (E: Erin.Cortus@sdstate.edu; P: (605) 688-5144).

Questions	California	Colorado	Delaware	Georgia	Illinois	Iowa	Louisiana	Maryland	Mississippi
How did your state consider and develop revisions to the National 590 Standard? (i.e. Listening sessions, committees, within NRCS)	We asked for review and comment from University of California specialists, CCAs and technical service providers who use the standard, California Department of Food and Agriculture agronomists, the State Water Resources Control Board, and NRCS-CA field, area and state office staff.	Revised National 590 planning criteria were adopted by CO NRCS verbatim, and additional state-specific criteria were added to the Colorado NRCS 590 Standard based on discussions with the Colorado Dept. of Public Health and Environment (CDPHE), Colorado State University (CSU) Extension and the EPA Region 8.	Had a committee formed of state agencies and extension. Once the draft was completed brought in farming groups and consultants.	Revised a Nutrient/Waste Management Committee consisting of university, state, NRCS and producers to revise the state standard.	Initial meeting with stakeholders plus 4 subcommittees (Industry, Extension and other academia, DOA, EPA, regulators, environmentalists). The committees consisted of 1) Develop a phosphorus index, 2) Develop the N-Leaching index, 3) Develop Adaptive N Management Guidelines, and 4) Education Subcommittee. We then held individual sub-committee meetings to obtain review and comment on the assigned topics.	Iowa 590 procedure was: 1) Conducted internal review, identified key issues, created initial draft; 2) Conducted science assessment utilizing USDA ARS and Iowa State University; 3) Requested review and input from technical, regulatory, commodity, and other stakeholders at several public meetings; 4) Posted draft, presented to NRCS State Technical Committee, requested input; 5) Posted revised draft for public review and input; 6) Will publish in the FOTG when revisions are complete.	The national standard was accepted as-is. Only affecting change was new limitation for organic wastes with a Moderate P Index rating. Because this section of the standard received so much attention nationally, water quality is of national concern, and any proposed modifications/changes for LA would have required excessive backup research and documentation, it was impracticable to even propose a change.	Revisions to the 590 Standard were based on MD state NM regulations and were developed with the assistance of the MD NRCS State Technical Committee – Nutrient Subcommittee comprised of personnel from MD NRCS, MD Department of Agriculture, University of Maryland Extension service, Mid-Atlantic Certified Crop Advisor Program, and Delaware Maryland Agribusiness Association.	Used guidance from nutrient management policy. Stakeholder meetings were held as well as two roundtable discussions with the entire stakeholder group including: MS Farm Bureau, MS Cattlemen Association, MS Department of Environmental Quality, MS Poultry Association, Alcorn State University Extension Service, MSU Extension Service, MS Pork Producers Association, MS Agricultural and Forestry Experiment Station as well as Agency personnel.
Link to State 590	[2013] http://efotg.sc.egov.usda.gov/references/public/CA/590-std-ca-03-13.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/CO/CO590.pdf	[2002] http://efotg.sc.egov.usda.gov/references/public/DE/590_02.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/GA/Nutrient_Management_(590)_Standard.doc	[2013] http://efotg.sc.egov.usda.gov/references/public/IL/IL_590_Final_2_2_2013.pdf	[2008] http://efotg.sc.egov.usda.gov/references/public/IA/Nutrient_Management_590_STD_2008_12.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/LA/LA590Standard_2012.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/MW/MDS90_12.pdf	[2013] http://efotg.sc.egov.usda.gov/references/public/MS/Nutrient_Management_Standard_590_Jan_13.pdf
What does your state use for a P-index (PI) and why?	The CA P-index was developed in cooperation with UC several years ago.	Colorado NRCS uses a PI that was developed in cooperation with CSU. The CO PI is patterned after the index developed by Lemunyon and Gilbert, 1993, which was transmitted to states as West National Technical Center, Water Quality Technical Note W2, August 1993.	University developed PSI.	University of Georgia developed P index	Illinois did not have a P-index previously. We had to develop a new one from scratch as a result of the 590 standard. The index follows the basic guidelines outline in the original release of the P-Index. The index is designed to lead a planner and producer to implement practices that will reduce the potential for phosphorus losses.	The Iowa Phosphorus Index which assesses the risk that P will contaminate surface water and facilitates conservation planning to manage that risk.	P index for LA (10/12)	Maryland currently uses a P-index that was developed by University of MD. Beginning in 1994, the staff at the university took the generic national model that was published in 1993 by USDA's NRCS and tailored it to Maryland. The Maryland Phosphorus Site Index is presently being updated by University of Maryland. It will be called the Phosphorus Management Tool (PMT).	Mississippi uses a tool that considers transport characteristics such as soil erosion and soil runoff class; distance water, and source characteristics which are weighed according to their influence toward P movement. There are four rates of application; low <5, moderate-5.1-9, High 9.1-22, and very high >22 where no P can be applied.
Link to State P-Index	[2010] http://efotg.sc.egov.usda.gov/references/public/CA/TN_Agron_CA_62_05-2010.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/CO/COATN_95.pdf	[2010] http://www.dle.nrcs.usda.gov/technical/agronomy/PSI-DE_Alb%20Counties_12_20_10.xls	[2012] http://efotg.sc.egov.usda.gov/references/public/GA/Ga_p_index_v12bsd1a.pdf		[2004] http://www.ia.nrcs.usda.gov/technical/Technical25Aug04.pdf	[2010] http://www.la.nrcs.usda.gov/programs/LASTC/Presentations/STC_Teleconference_7-25-12_590_NM_Phosphorus_Site_Index.pdf		[2007] http://www.nrcs.usda.gov/Internet/FS_E_DOCUMENTS/nrcs143_014857.pdf
What does your state use for a nitrogen leaching index (NLI), and why?	We are using both the Nitrate Groundwater Pollution Hazard Index developed by the UC Center for Water Resources, and the ARS Nitrogen Index.	Colorado NRCS uses a NLI that was developed in cooperation with CSU.	Developed index by using information out of RUSLE2, which is based on Hydrologic Soil Groups.	The Leaching Index in RUSLE2.	The NRCS N-Leaching Index does not do an adequate job of addressing N-Leaching where fields are tilled. Two scenarios where risk of N loss is highest. More than 50% tilled, or shallow to bedrock/high water table (within 20 ft) have to meet criteria (i.e. cover crops or N inhibitor) to apply at N rates.	The Leaching Index in RUSLE2.	The Soil Survey Leaching Index Rating	No. Nitrogen leaching is not a risk to water quality, including drinking water in the State of Maryland based on the Maryland Department of Agriculture requirements for the use of BMPs to reduce the risk nitrogen leaching on all sites.	The Leaching Index in RUSLE2.
Link to State Nitrate Leaching Index	[2011] http://efotg.sc.egov.usda.gov/references/public/CA/Nitrogen_Index_4.4_User_Manual_8-11.pdf	[2012] http://efotg.sc.egov.usda.gov/references/public/CO/COATN_97.pdf			[2013] http://efotg.sc.egov.usda.gov/references/public/IL/Illinois_Nitrogen_Management_Guidelines_Final_2_19_2013.pdf				
Does your state have any unique options for winter spreading and why?	None.	Winter spreading of organic amendments is acceptable for NRCS plans if the CO PI risk is low. The CO PI addresses slope, cover and nutrients applied, and the CDPHE addresses required setback distances for organic amendment applications.	None.	None.	No spreading on snow-covered or saturated ground. Winter spreading is allowed only on fields where all necessary sheet & till and ephemeral erosion practices are implemented and the P-index is at least a medium. These are guidelines that have not been previously required in Illinois.	Winter spreading of manure and fertilizers follows the national 590 standard. Storage and application is to be planned to not spread on frozen, snow-covered, or saturated soils. Emergency spreading criteria are described.	We take the time of application into account in the P Index. This is necessary as there is less biomass and active plant growth present to intercept off-site movement of P.	Winter application is currently defined in Maryland Department of Agriculture regulation as the time period between Nov 16 and Feb 28. After July 2016, it will then be defined as Nov 2 - Feb 28 for MD counties east of the Chesapeake Bay and Susquehanna River and will remain Nov 16 - Feb 28 for MD counties west of the Chesapeake Bay and Susquehanna River. Producers may not make a winter application of chemical fertilizer to cropland. Organic fertilizers may only be applied during the winter timeframe if the operation has inadequate storage or management options. Operators must make plans for adequate storage to eliminate the need for winter application. These regulations were brought about due to initiatives to clean-up the Chesapeake Bay.	Nutrients must not be surface-applied if nutrient losses offsite are likely. This precludes spreading on: frozen and/or snow-covered soils, and when top 2 inches of soil are saturated from rain or snowmelt. Exceptions can be made for surface-applied manure when specified conditions and practices are met as defined by NRCS in concurrence with the Mississippi DEQ as follows: When field slope is less than 5%; When crops are actively growing; When a minimum forage height of 4 inches is maintained; When specifically addressed in the NMP and the amount and form of nutrients to be applied does not exceed agronomic recommendations; and When the buffer widths for intermittent streams and surface water bodies are increased from 50 ft to 100 ft.

Summary of responses from national survey sent out to all States for Waste to Worth Conference presentation *Nutrient Management Standards, Making Them Where We Work (April 3, 2013)* . (Green columns denote speaker at Waste to Worth Conference).

For questions regarding this table please contact Nichole Embertson (E: nembertson@whatcomcd.org; P: (360) 354-2025) or Erin Cortus (E: Erin.Cortus@sdstate.edu; P: (605) 688-5144).

Questions	California	Colorado	Delaware	Georgia	Illinois	Iowa	Louisiana	Maryland	Mississippi
Does your state have any unique plans for air quality?	NRCS in CA has been actively involved in helping farmers address air quality issues, particularly in the San Joaquin Valley for several years.	None.	None.	None.	None.	None. Encourage the use of the National Air Quality Site Assessment Tool to assess livestock operations and provide options to mitigate pollutants. (http://naqsat.tamu.edu/)	None.	None. Maryland Department of Environment monitors and manages air quality throughout the state.	None. However, we changed the statement in our MMP guidance to reflect our use of swine facilities that do not have pits.
What type of nutrient management planning tool is used by your state's producers and/or planners and why?	Most producers utilize the services of consultants who will handle their nutrient management planning.	For nutrient plans that NRCS is technically responsible for, producers use the CO NRCS 590 Job Sheet that includes the CO NLI, CO PI, and Biosolids Plant Available N (PAN) and Land Base Requirement calculators.	DE doesn't have any. Available for use, MMP and NuMan Pro.	UGA using state regulations as a basis.	Producers use the Maximum Return to Nitrogen (MRTN) tool developed for the mid-west region by the Univ. of Illinois. TSP's are also using the Manure Management Planner (MMP) software.	Manure Management Planner (MMP), Iowa Department of Natural Resources Manure, Iowa NRCS Nutrient Management spreadsheet Management Plan form, Privately developed tools	The only tools we use were developed for use by Conservation Planners working with producers. We use, primarily, a combination of Nutrient Management Specifications as well as a detailed Excel tool that can generate reports (by-field and summary). This tool was created in Louisiana to help Conservation Planners compile the information required (by the standard) for an NMP.	NuMan Pro (Nutrient Management for Professional software), developed by UMD, provides field-specific recommendations for environmentally sound utilization of commercial fertilizer, manure, and other organic materials such as biosolids. It quantifies the nutrient value of manure and other organic by-products, and utilizes the Phosphorus Site Index (PSI) to develop plans that reduce risk of nitrogen and phosphorus losses from leaching and runoff.	MMP developed by conservation planners (NRCS) using collected field data. At present there are no registered technical service providers in Mississippi.
What role does the 590 Standard play in your state? (i.e. use similar standards in regulations, state regulations are stricter)	We view 590 as a document that should be used by producers to help improve nutrient management. When nutrients are appropriately managed, regulators are typically satisfied.	The CO NRCS 590 Standard only describes the planning criteria applicable to nutrient plans that NRCS is technically responsible for. State of Colorado nutrient management planning criteria is less restrictive.	CAFOs have to utilize 590 standard. Yet to be determined if all producers will have to utilize. The one significant difference is the state regulations do not have a No P application, but a 3 year crop removal.	Reflects state regulations, UGA recommendation and agency policy.	Currently the 590 is used by NRCS and is referenced in NPDES permits. The state is currently revising their NPDES requirements and plan to take out reference to NRCS standards. 590 state standard will adopt changes in CAFO regs even if below 1000 AU, have to abide by DOA/EPA regs.	Attempts were made to align the 590 standard with state regulations. CNMPs written based on the 590 standard are accepted by the state, though additional criteria may need to be added for some larger livestock operation.	The only state law tied, indirectly, to the Nutrient Management Standard is related to the Louisiana Master Farmer (LA MF) Program.	In Maryland, the 590 Standard closely mimics the state regulations and this is due the fact that nutrient management is so heavily regulated.	The 590 standard is the guide for all technical and financial assistance delivered through NRCS that involve the proper timing, placement, rate, & source of nutrient application.
What do you see as the future topics/issues that will come up in the next 590 iteration in 5 years?	One goal we have is to see improved implementation and wider adoption of sound nutrient management practices.	Additional air quality planning criteria could be grouped by pollutant of concern, and the NHCP 590 standard is too long.	None.	Will there be a regional P index?	The use of adaptive management tools are still new enough that there is concern if they really have any value; Manure applications on frozen/snow covered ground; Having enough manure testing labs that are certified; Use of cover crops in reducing N & P losses from Illinois fields. A lot of emphasis on tile drainage (even for P), and what is the source.	Develop service industry infrastructure to help producers make good nutrient management decisions based on quality, easily accessible information for both production and clean water; Optimize timing of manure application with high ammonium content to slow nitrification and reduce leaching risk; Innovate to manage N in terms of source, rate, timing, and placement to improve use efficiency and reduce loss; Reduce, control, and/or trap nutrients from tile lines; Improve manure management and use of cover crops; New crop rotations to reduce the need for added N, decrease erosion and N leaching, improve water holding capacity, and are economic; Improve and increase equipment calibration adoption; Improve the uniformity of manure and other biosolid application through better storage, mixing, testing, and application technologies.	I do not know of any issues that may arise.	We believe that the 590 Standard in Maryland will continue to follow in the steps of the Maryland Department of Agriculture nutrient management regulations, as Maryland agriculture is so heavily regulated.	The idea of nutrient loading and nutrient trading will be finalized by then.

Questions	Missouri	New York	Nevada	Oklahoma	Pennsylvania	South Dakota	Tennessee	Washington	West Virginia
How did your state consider and develop revisions to the National 590 Standard? (i.e. Listening sessions, committees, within NRCS)	45-day external review after an internal (NRCS) review. Outside input came from the University of Missouri and Department of Natural Resources. This process was less formal than in previous years because the last revision of the Missouri 590 was extensive and addressed almost all of the issues in the 2012 national version.	NY NRCS used a committee of outside public sector partners. Partners included NRCS, SWCDs, NYS Ag and Markets, NYS DEC, Cornell University, Cornell Cooperative Extension. Public comment periods were provided for the general public.	With NRCS and some advice from Nevada Division of Environmental Protection (NDEP).	Working group with NRCS, land grant university and state agricultural agency personnel.	PA conducted an unusually broad, inclusive, and transparent review process with stakeholders. The State Conservationist positioned 590 revision process as opportunity to build stakeholder ownership of nutrient management. The Nutrient Management Subcommittee of STC includes feed/animal integrators, environmental advocates, farmers, fertilizer industry, Farm Bureau, and state agency representatives. Four subcommittee meetings and five technical presentations reviewing 590 revision progress and requesting input.	Face-to-Face Partner Meetings included NRCS, South Dakota Departments of Agriculture and Environment and Natural Resources, Extension, Producer Associations (including Beef, Corn, Pork), Environmental and Conservation Associations and Farm Bureau representatives; also presented and discussed at State Technical Meetings.	Multi-agency committee and public review.	WA developed a STAC Nutrient Management Technical Subcommittee of respective interested parties; NRCS, Regulatory agencies, Dairies, Consultants, Commercial Fertilizer industry, WSU to gather perspective and offer guidance. Phosphorus Index Committee with Oregon included an organizational meeting for WSU, OSU, regulatory agencies, and NRCS.	Primarily input from producer groups and members of NRCS state technical committee.
Link to State 590	[2013]. http://efotg.sc.egov.usda.gov/references/public/MO/590_std_313.pdf	[2013]. http://efotg.sc.egov.usda.gov/references/public/NY/mvps590.pdf	[2012]. http://efotg.sc.egov.usda.gov/references/public/NV/590_Standard.pdf	[2012]. http://efotg.sc.egov.usda.gov/references/public/OK/590std.pdf	[2013]. http://efotg.sc.egov.usda.gov/references/public/PA/PA590Jan2013.pdf	[2012]. http://efotg.sc.egov.usda.gov/references/public/SD/590.pdf	[2000]. http://efotg.sc.egov.usda.gov/references/public/TN/Nutrient_Management_528590%29_JobSheet.pdf	[2009]. http://efotg.sc.egov.usda.gov/references/public/WA/590_std_040609.pdf	[2012]. http://efotg.sc.egov.usda.gov/references/public/WV/WVNutrientManagement590_Standard04112013.pdf
What does your state use for a P-index (PI) and why?	We have used a P-index for a decade. It is a spreadsheet. We acknowledge that it is in need of an update, and there is now a four-state effort funded by the EQIP Conservation Innovation Grant process to update the P-indices of the "Heartland States" (Iowa, Kansas, Missouri, Nebraska). Missouri's P-index is heavily influenced by soil loss and requires the RUSLE2 soil loss.	NY has used a P-index since 2001. The PI uses a combined source/transport score for soluble and particulate P. The PI has a restriction at upper levels (High) for applied P not to exceed crop removal rates and a red line cut off (very High) where no additional P is allowed. The only change made to PI is that the particulate transport score now uses annual instead of rotational average soil loss value.	Nevada has its own P-index that is currently being rewritten with RUSLE2 and WEPS added.	Soil test analysis results.	The Pennsylvania Phosphorus Index: Version 2 – October 2009 http://panutrientmgmt.cas.psu.edu/main_planning_tools.htm	P-Index uses a table format originally developed in 2003, wherein nitrogen or phosphorus-based application (and risk) is assessed based on Soil P, soil loss (using RUSLE2 and just recently WEPS) and presence of vegetated buffers.	The committee is still working on revising the state established P index.	In review. The SERA 17, scientific panel will review all State's PI once they are in consensus on the model to used for evaluation...2-3 years out.	We use a revised P-Index developed by UWW Davis college of agriculture and forestry which is based upon P index from mid Atlantic and northeast regions.
Link to State P-Index	[2007]. http://extension.missouri.edu/explorepdf/agguides/soils/g09184.pdf	[2003]. http://mmsp.cals.cornell.edu/publications/files/Pindex.pdf			pubs.cas.psu.edu/free_pubs/pdfs/uc180.pdf (must copy and past link into browser)		[2001]. http://efotg.sc.egov.usda.gov/references/public/TN/P_Index.doc	[2001]. http://efotg.sc.egov.usda.gov/references/public/WA/NRCS-WA_WQ_TN2_Phosphorus_Index.pdf	[2011]. http://efotg.sc.egov.usda.gov/references/public/WV/WVCPAW590_3_P_Index_Ver_2_04112013.pdf
What does your state use for a nitrogen leaching index (NLI), and why?	Our "Leaching Index" (not just for nitrogen) is a very simplistic tool based on hydrologic index interpretation for a county. We are in the process of revising this tool to be more site-specific and based less on interpretive summaries and more on Ksat information. It will also be Web GIS-based.	New York has a state specific NLI (also used since 2001). The NLI combines soil properties for leaching with township level specific climatic factors. NLI of high restricts N application timing, form, and rate.	The Leaching Index in RUSLE2.	The Leaching Index in RUSLE2.	None. PA considers leaching risks on all planned acres and has regulations and Penn State planning guidance for making best management decisions to mitigate. Meeting with national NRCS leadership, Penn State Extension Specialist and NRCS concurred to allow 590 standard criteria without NLI assessment. As a result of 590 revision process, Penn State Extension is developing (spring 2013) new leaching-focused decision matrix tool and fact sheet.	Saturated Hydraulic Conductivity (Ksat) combined with the First Occurrence of Aquifer Materials maps (where available) to assess the risk to water quality due to nitrogen loss.	The committee utilized information from RUSLE2 and state soils. Still in development.	New to WA. In the process of developing guidelines.	WV uses the WVCPA_FS_2 Nitrogen Application Criteria Based on Environmental Sensitivity of Sites.
Link to State Nitrate Leaching Index		[2003]. http://mmsp.cals.cornell.edu/publications/extension/leachingindex.pdf	[1992]. http://efotg.sc.egov.usda.gov/references/public/NV/67.pdf						[2013]. http://efotg.sc.egov.usda.gov/references/public/WV/WVCPAFS590_2NitrogenApplicationTiming040913.pdf
Does your state have any unique options for winter spreading and why?	Application of manure or inorganic fertilizer is not allowed on frozen, snow-covered, or ground saturated due to rainfall or snowmelt. Applications under these weather conditions can be made if both NRCS and the Missouri DNR agree that the risk of loss to surface waters is low. State law was responsible for restrictions on applications of manure (not fertilizer) in the case of CAFOs. New restrictions have been added due to the national 590 re-write.	Prior to 2013, the restrictions to winter spreading were those that may have been flagged by the PI and NLI timing factors and general year-round setback requirements from sensitive areas. Cornell University Guidelines for winter spreading were also considerations. The 2013 NY590 standard contains additional setback requirements from sensitive areas for spreading on frozen/snow covered soils. Furthermore, some soil restrictions for spreading on frozen/snow covered soils are now required (frequently flooded soils, soils less than 40 in to limestone bedrock). The inclusion of adverse weather considerations and annual soil loss to the PI could also restrict spreading on some frozen/snow covered fields under the new standard.	At this time NDEP is saying that produces can not apply manure on snow cover ground.	Nothing unique; We do not apply organic fertilizer on soils that are frozen or snow covered.	Regulations for CAFO operations, state regulated AFO, and all farms with manure are regulated with respect to winter manure application. Application is allowed only under conditions specified by the state water quality authority PA Department of Environmental Protection. The 590 standard discourages winter application but allow contingency planning and application under specific conditions.	Liquid manure is not to be applied to saturated, snow covered or frozen soil except in emergency situations. Solid manure is not to be applied to saturated, snow covered or frozen soils, except in specific situations: 1) When incidental amounts of manure is collected during feedlot snow removal and winter manure storage is not available. 2) When a natural disaster or extraordinary weather prevent application during planned periods. Must keep records; follow setbacks; no winter nutrient applications on floodplain; winter applications only on fields with slopes <4%.	None.	NRCS uses a Technical Note for Winter Application, and some Western Conservation Districts are using other options. These options are in discussion.	Emergency spreading on frozen ground must follow the Phosphorus, Nitrogen Guidance and the WVCPA_WS_1 Critical Setback Distances.

Questions	Missouri	New York	Nevada	Oklahoma	Pennsylvania	South Dakota	Tennessee	Washington	West Virginia
Does your state have any unique plans for air quality?	None. Our non-attainment areas are in urban areas.	None. Our 2013 standard uses the national language for additional criteria under air quality.	None. At this time Nevada only regulate two county (Clark county-Las Vegas and Washoe county-Reno).	None.	Including AQ in every NMP is not a current requirement. PA has Odor Management regs covering certain operations. 590 includes a purpose option for AQ nutrient management that can be used when AQ is addressed in plans.	None.	None.	NRCS proposing air quality risk assessment to evaluate air quality hazards and then propose mitigations to reduce risk.	None.
What type of nutrient management planning tool is used by your state's producers and/or planners and why?	Extensive. See www.nmplanner.missouri.edu . They were developed by the University of Missouri and a GIS applications developed Center at MU call CARES.	MMP is the benchmark tool for planning 590. Private planners are allowed to use proprietary software as long as the results conform to the university guidelines and NY 590. Producers are required to use certified planners to develop 590 plans.	At this time only NRCS 590 job sheet. We are lucky if the producer does a soil test.	None that a produce would use. We do have a P assessment tool that we use for planning and provide a report to producers which includes nutrient budget.	Pennsylvania Nutrient Management Program website provides tools and links available to producers. Producers can and do become certified as a private NM specialist under the program with authority to create state certified NM plans (CAFO, AFO, and 590) for their operations. The Manure Management Program provides workbook and guidance for producers required to have a Manure Management Plan (MMP) for their operation. Districts and Extension offer local workshops for producers developing MMPs. MMPs do not meet the 590 standards.	NRCS-developed spreadsheet tool is used by planners. This or a DENR-version are used by producers or consultants for permitted facilities. Variations used by commercial applicators - this is in a state of change.	TN NRCS requires MMP, RUSLE2, and P Index. State Agencies require P Index regarding CNMPs. Plans for NRCS must be by a certified NM or CNMP planner.	Several tools are out there for planners. MMP hasn't currently been used much in WA, but the word template used in MMP format is used.	NMP software was developed using the VA NutMan system with WV soil data and a WV version of Manure Management Planner is the early stage of development.
What role does the 590 Standard play in your state? (i.e. use similar standards in regulations, state regulations are stricter)	Missouri's 590 standard has been more restrictive than state-level guidance, but it is voluntary and not regulatory in nature. A new nutrient management technical standard developed by the DNR was modeled after Missouri's 590 standard, and is less restrictive than 590.	Regulated farms are required to implement NY 590 as part of the state permit system. No separate state standards or requirements beyond NY 590 are required for nutrient management.	NDEP is saying that Nevada will follow NRCS 590 standards.	The 590 standard attempts to mesh with state regulations.	Pennsylvania's nutrient management regulations pre-date the USDA/EPA Unified Strategy and were completely revised in 2006. Partnership between Penn State and the USDA ARS Pasture Lab provided national leadership for the first P-Index tools and resident scientists active in SERA17. All state partners respect the guidance provided by national NRCS Nutrient Management (590) standard criteria, implementation guidance and policy. When 590 revisions are required because of new national 590 issuance, the process serves to stimulate self-examination of the status quo, consider state-wide policy and planning guidance revisions, and adopt new policy and training guidance. The NRCS 590 is not mentioned in the regulations.	Referenced in state regulations for nutrient management.	Regulatory agencies are on the committee. Most aspects of the 590 are the same as regulatory, but a few aspects of the 590 are stricter.	590 Nutrient Management is a conservation practice and it and other risk assessment tools are for planning, not regulatory purposes. However, State Law and Federal CAFO rule reference the 590. The new 590 asks for the State Water Quality authority's concurrence with NRCS on several levels of treatment. NRCS will mediate some practices but will agree to disagree until the Regulatory agency makes it a State law. In the new 590, NRCS was in consensus with DOE to complete a PI and NLI when a nutrient was applied. This is an example of stricter than the Standard.	The 590 standard is state standard for ag water quality plans. The 590 P-index system is used by the State of WV to develop CAFO NMP documents.
What do you see are the future topics/issues that will come up in the next 590 iteration in 5 years?	Almost all the controversial issues will be related to P-index and restrictions on phosphorus applications. Related this will be tighter guidance on how P-indices are interpreted and implemented. As more nutrient reduction mandates due to Gulf Water Hypoxia are promulgated, our nutrient management standard will be indirectly impacted.	More restrictions to spreading manure on frozen/snow covered soils are anticipated in 5 years. Concerns exist in NY if all manure is stored and then land applied all at once if we move to a total storage requirement. New York sees daily spreading of small amounts of manure in a responsible matter as environmentally sound. Our greatest potential for runoff events occur in late spring and early summer.	None.	The Nutrient Tracking Tool (NTT) needs to be finalized so that it can be used in the next 590 iteration.	First and foremost, no technical standard can protect WQ in the long-term because the infrastructure that supports our national animal food products is not recycling, but rather sinking nutrients near population centers. Agronomists cannot solve this and a national discussion needs to occur. 590 is a Band-Aid buying society time. Society must address the larger issues. Over the next five years, benefits and eco-system services provided by healthy soils will be better understood and producers will increasingly adopt and integrate managements improving their soil's health. Technology alternatives to land application of manure may emerge.	Precision Ag application. Considerations for tiling. Winter application - balancing common sense with appropriate level of protection. Use of cover crops in NMPs and systems. Pulling phosphorus with diverse crop rotation.	Future topics will include the nitrogen leaching index and the P index with regard to 590 and are also the remaining questions/ concerns in the state.	Land Grant University guidance was asked for a dozen times in the Standard. In the West, this could prove to be a burden to Universities that are also have budget issues and fewer staff to maintain documents. The Western Universities are looking at pooling documents for the Region, so guidance such as fertilizer guides are available to all the Western States. WA will probably have a CAFO permit the next iteration of the 590. I think feedlots will be addressed and not just dairies.	Don't want 590 to be used as a regulatory tool or benchmark. It was developed to guide planners and landowners doing planning. P-index is subject to change in <5 years due to a Regional CIG project developing a method to harmonize P-indices in the Chesapeake Bay. Buffer width and O&M need to be clarified so fields can be farmed and still improve water quality, wildlife habitat, and be maintained by the farmer.