Summary of Survey and Interviews of Agricultural Nutrient Management Expert Panel

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Why?

- To obtain information on NM BMP definitions, effectiveness, implementation, and programs
- Needed to get a handle on the variability in how states implement and report on NM to be able to adjust the crediting and Bay modeling to better reflect that variability.
  - NM crediting in Bay modeling currently assumes all states are equal. Not accurate, but…
  - Hadn't done a summary of how the various Bay states implement and report on NM, so had no clear understanding of the variability

Who?

- 25 of 26 Expert Panel members
  - State agriculture programs (DE, MD, NY, PA, VA, WV)
  - Academia (PSU, UMD, VT, WVU)
  - Federal (ARS, EPA, NRCS)
  - Heinz Center, International Plant Nutrition Institute, Northeast Pasture Consortium

How?

- Developed questionnaires with AgWG Coordinator
- 9 questions for state program experts
  - Comments on draft state ag program profile developed by Tt
  - Program gaps for addressing NM (e.g., authority, exceptions, coordination)
  - Technical standards or requirements for NM
  - Definitions: N-based, P-based, precision/decision, ENM
  - Tracking and reporting BMPs
  - Practice effectiveness
  - Factors affecting effectiveness
  - Additional resources for NM information, other comments, other contacts

How?

- 10 questions for other experts
  - Definitions: N-based, P-based, precision/decision, ENM
  - Is focus of P/D on N or P?
  - Recommendations for determining N recommendations and yield goals
  - Who is required to have a NMP in your area
  - Extent of implementation of NM as designed
  - Practice effectiveness
  - Factors affecting effectiveness
  - Additional resources for NM information
  - Factors to consider and suggestions for tracking, crediting, and modeling NM
  - Recommendations for accounting for voluntary NM

How?

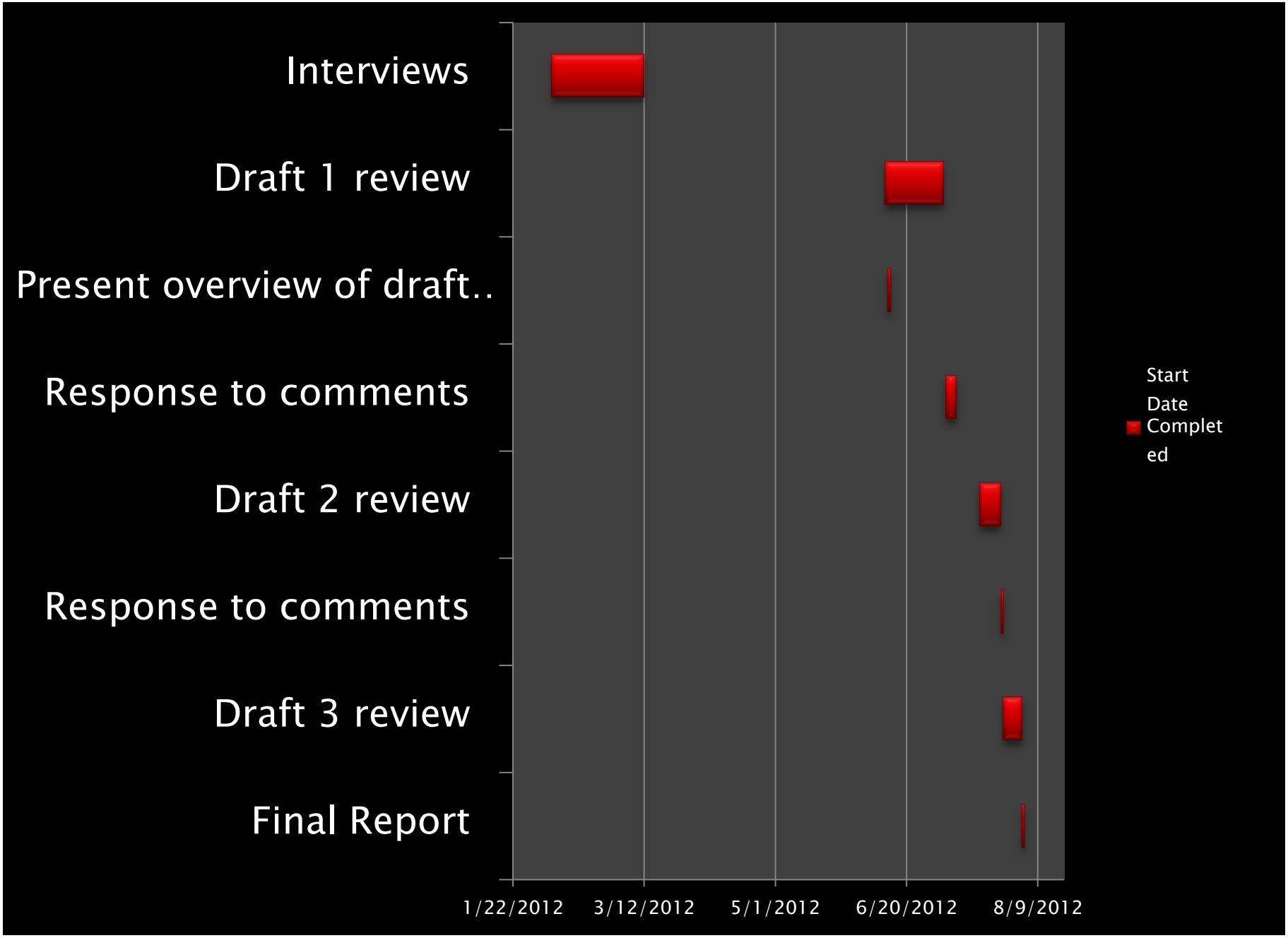
- Contacted experts to set interview date
- Mailed Qs for completion in advance
- Discussed responses over telephone; added information
- Sent summary to panelist for review
- Finalized with panelist approval (not public)
- Incorporated all survey results into summary

When?

- Interviews February 6 – March 9, 2012
  - Scheduled for 1 hour (often exceeded 1 hour)
  - Draft final survey sent to panelist within days
  - Survey finalized within a week of interview
- First internal draft summary report completed March 28, 2012
- Draft summary for review to all panelists 6/12/2012
- Presented overview of summary report during NM EP call on 6/13/2012
- Comment period through July 4th (5 commented)

When?

- Responded to each commenter with proposed changes for his/her comments July 5-9, 2012
- July 9, 2012 – Revised draft report for commenter review
- July 18, 2012 – Draft 2 sent to entire EP (changes marked). Comments through 7/26/2012
- Sent changes only on 7/27/2012 for review
- Final comments due 8/3/2012
- Final report 8/4/2012


Interviews
Draft 1 review
Present overview of draft..
Response to comments
Draft 2 review
Response to comments
Draft 3 review
Final Report
1/22/2012
3/12/2012
5/1/2012
6/20/2012
8/9/2012
Start Date
Completed

Now what?

- Summary report is:
  - Designed to be as inclusive as possible.
  - Primarily a descriptive summary.
  - Intended to be used as a resource for EP deliberations.
- Bring to light variability among the Bay states
  - NM definitions
  - NM effectiveness
  - NM tracking, reporting, and crediting
  - NM modeling

Sample Observations: NM Definitions

- Not only dissimilar between states but may be dissimilar between professionals within the same state.
  - E.g., P-based definition under Scenario Builder is somewhat different from P-based planning under the NRCS 590 practice standard
- These differences can cause confusion
- Nearly all interviewees believe that NM definitions should be as close to the 590 as possible for consistency and alignment with the major funding source implementing NM

Sample Observations: NM Definitions

- P-based included:
  - P application < crop P removal
  - P application = crop P removal, and
  - P application = crop P removal or based on soil test recommendation
- Several expressed concerns regarding soil P buildup and the use of a P-site Index
  - P-based NM can cause soil P increases even on very high P soils
- Except for MD and DE, each state has a different P Index construct.

Sample Observations: NM Definitions

- Several concerns expressed regarding enhanced nutrient management (ENM)
  - Disagreed with presumption that recommended N rates exceed optimum rates
  - Under prescribes N for optimum yield (crops suffer)
  - Not a BMP
  - Adaptive NM is a better alternative definition

Sample Observations: Yield Goals

- Yield goals are a major driver of NM plans and the parameter often with the most uncertainty and flexibility.
- Set in two basic ways: (1) producer records and (2) research to provide soil-crop capability tables.
- Source of yield goals can vary across states.
  - NY has data for #2
  - Most other states rely on #1
- Much agreement that University recommendations do not include excess nutrient that could be saved.

Sample Observations: Practice Effectiveness

- Efficiency in nutrient use depends on related practices to such a degree that it is difficult to ascribe changes in efficiency to a single practice. For example, conservation tillage (e.g. no-till) reduces sediment-bound P but increases dissolved P losses.
- There are not many reports of direct measurements of water quality impacts with precision/decision agriculture.

Sample Observations: State Regulations

- NM is required of CAFOs in all Bay states.
- DE and MD require NM of essentially all animal operations, cropland, pasture, and nurseries.
- WV requires NMPs only of permitted and large CAFOs.
- Some states have adopted their own extensive technical standards for NM into their regulations (e.g., DE, MD, PA), while others rely at least partially on the NRCS 590 practice standard (e.g., NY, WV)

Sample Observations: Reporting/Tracking/Modeling

- Tracking and verification of NMPs is variable across the region.
  - MD and DE conduct on-farm QA/QC visits to inspect the planning and implementation of a small sample of farms.
  - PA visits all CAFOs annually, and VA visits farms on a 3-year rotation as plans are redone.
  - NY's voluntary AEM program, coordinated by the Upper Susquehanna Coalition (USC), uses an assessment system that includes one-on-one visits and consultation by an environmental professional housed in a SWCD.
  - VA tracks all NMPs by GIS, keeping track of beginning and ending dates for all plans.

Sample Observations: Reporting/Tracking/Modeling

- Voluntary programs are not significant in MD and DE as virtually all users of manure or fertilizer are under the mandatory programs.
- WV is almost entirely voluntary, with NMPs provided to poultry operators by WVDA.
- NY has a voluntary AEM program.
- PA has a large number of farms with NM planning requirement but no verification.

Discussion