Notes

Mini – Meeting ADMS Task Force / ADMC
St. Paul, MN
July 28-29, 2004

The is in Attachment A, and those in attendance, their affiliation, address, and phone number are listed in Attachment B. The following notes do not cover all agenda items and do not contain the detail of all discussion content on those included, but are intended to document proposals, needs, or decisions. *(Notes by Wil Fontenot.)*

Next Meeting(s) – The **Fall Meeting** places considered were Lafayette, LA; Baton Rouge, LA; and New Orleans, LA. Louisiana was the state considered since Jim and Wil have ducked hosting for two years! New Orleans won out. The date most likely to suit the most members was the week of November 15. The ADMS/ADMC could meet on the Thursday and Friday of that week and the NCR-207 Committee could meet the first part of the week since many of the members are common to both groups.

Agenda items for the next meeting:

Report on the Hypoxic Zone by NOAA or some other scientists.

Internal document to identify research questions on the fate and transport of nitrates in the managed water table.

Since the St. Paul Meeting, Jim and I met on August 9 and discussed other potential meeting topics for New Orleans:

- Industry Led Solutions/Land Care US……Larry Beran,
  - (How are ADMS/ADMC, GOMP, and ILS complimentary?)
- Cabin Teele …… ……Tim Appelboom
  (sample showcase watershed in the Lower Mississippi River Basin)

Running Drainmod for two major soils per Mid West State

Action: Progress on acquiring data to use Drainmod for drainage system design was discussed.

Conclusion and Future Need: The need to run the model for two major soils per state is still in progress. NRCS is committing about $70,000 for this effort. ARS will also contribute monies to get this implemented. One of the considerations for furthering this effort to more soils in the future is developing the capacity to run the model and reduce this output to readily useable information for the field practitioners.

Training Development for ADMS

Action: The Training Work Group reported on its progress. They have an outline of topics that instructional materials should cover.

Recommendaton: They recommend that a period of time (one day) should be added to existing courses such as the ones held in Ohio and Minnesota to cover these additional topics.

ADMS Effects on Greenhouse Gases

Findings on nitrous oxide releases from ADMS croplands: Dan Jaynes presented his conclusions from the literature search. His conclusion was that less nitrous oxide would be released from managed lands than from waters released and processed in the stream and rivers.

Action: Dan will write a short paper with those conclusions to be posted on the ADMS Website. This paper will be set up on the webpage so that anyone with additional findings can submit them for addition to this document.

Future Need: A question was raised about the effects on methane production. No one knew the answer to this and this should be looked into.

Another question, "How much N is carried over for the next crop with and without ADMS?" The consensus was that the answer to the question is not presently known. More research is needed.

Another question – will reductions in the releases of nitrates from nutrient management equal the saving from ADMS? The answer was yes and don't know.

Conclusion and need for **Action** on this item is that the Task Force should sponsor an internal document to identify research questions. This will be an agenda item for the next meeting.

Design Criteria – Practice Standard approval progress - ADMS States

Action: States are making progress on getting Conservation Practice 554 approved in each state. A check of each states Electronic Field Office Technical Guide indicates that some states list the standard. Others have done significant work but have not gone through the final stages of approval.

Recommendation: States complete getting this practice approved so the producers that want to include this in their CSP plans can do so.

Economic Impacts of ADMS

ADMS should look at the least alternative cost of removing N. Is it wetlands or changes in design spacing as well as other conservation practices such as nutrient management. With changes in design spacing that would allow 80% of drainage needs to met, the reduction in yields and the subsequent loss of income may be less than the environmental cost of removing N from streams and water bodies. Other impacts that need to be considered are carbon, sediment, and phosphorus. Other effects will surely arise as more is known. The number of fishery advisories involving methyl mercury could make this compound an important one relative to agricultural nonpoint in the future.

Discussion on how to handle ADMS effects on the following other factors:

Macropores/preferential flow and the effects on potential pollutants from manure including phosphorus and pathogens. This topic might be covered by papers that will be presented at the Ohio Conference.

Earth worms (night crawlers) – Topics of concern – raising the water table during the non-growing season and the effects on the survival and rate of residue consumption and how this would affect soil health. Preliminary indications from research in Indiana is that effect on the population of earthworms is minor.

- Cover crops - their affect on nitrogen utilization and thus reduction in flows to surface waters. Some research on with rye as a cover crops shows a 60% decrease of nitrate residual when planted after corn & SB. One of the questions is will the cover crop return N for the following crop?

Recommendation: The Task Force should ask for volunteers to perform literature research and produce a summary of effects papers similar to N2O type effort.

Action Items for FY – 05

- SWCS – submittal of topics on ADMS for 2005 Conference. This should be an agenda item for the ADMS meeting in the first quarter in FY- 05. (Note: this did not make the agenda for the New Orleans meeting.)

- List 554 as a component for enhancement payments in CSP and make this a companion practice with nutrient management where subsurface drainage is established. F. Kollmann as time permits will draft language to NWMC on this topic.

General- the notion of raising the water table at the end of growing season to reduce out-flow and lowering the water table as the time of planting approaches is accepted as a

sound practice. However, more specifics are needed on operation of structures that would make Practice 554 work.

Monitoring protocol - Richard Cook will follow up with Tom Davenport on establishing a protocol for a project in IL that could be used as a prototype for other project.

Red River of the North as a Potential ADMS River Basin

Problems – Flooding is a big problem that is of high concern with the farmers in the area. Subsurface drainage is just beginning to become a practice in this region. Some of the concerns are:

- Phosphorus along with sediment rather than nitrates are being delivered to Canada
- Lake Winnipeg is the drinking water source for the City of Winnipeg, Canada

Setting -

- Very flat topography in the valley
- River flows North. Ice begins melting in the south and ice dams back the water and causing floods in the southern section of the valley.
- Surface drainage is the main source of drainage presently
- Stratified soils lenses from old lake beds could be the cause of localized high water tables in parts of fields causing perched water tables in the root zone.
- Tile drainage could help deal with this problem

Fifty to eighty percent of the sediment from the region is delivered from intense single events rather than snow melt. Most large floods occur around mid-April and are related to the Spring thaw.

Questions:

How effective would subsurface drains be in reducing phosphorus?
Overall phosphorus, pesticides and sediment contributions are small compared to Southern MN

Observation: Carbon content of the soil will likely decrease with increased aeration allowed with better drainage. This could be an adverse affect?

Farmer Perspective:

- Salts are accumulating.
- An increase in the planting window of10 days (short growing season is a big concern) would be a plus. Will regulating the water table provide a decrease or increase in planting window?
- Canopy decreased RO
- Increase evapotranspiration- more water removed
- Subsurface drainage if managed could allow for more rainfall to be stored in the soil profile
- More biomass would be produced because of better crop growth

- Could increase the length of the flooding period but could extend the period of flow but lower the peaks?
- No effect on snow-melt flooding, especially if soil is still frozen while surface snow is melting.

Drains could decrease phosphorus, sediment and pesticides. It could Increase N although sugar beets don't require much N.

Water table management – If most of the systems are pumped management can be accomplished by turning the pumps on and off as desired.
Notes: (data on # of systems w/pumps is available – these are permitted.)

Concern about future land use changes:
- Effects of more crops utilizing N
- Movement of livestock in the valley

ATTACHMENT A

Agenda
Agricultural Drainage Management Systems Task Force/Coalition
St. Paul, Minnesota (in conjunction with SWCS Annual Conference)
July 28-29?, 2004

Meeting Place:

Day & Time	Topic	Who
Wednesday July 28		
8:30	**OPENING AND INTRODUCTIONS**	**Jim Fouss or Wil Fontenot** (A.M. Chair)
8:45	**REVIEW OF AGENDA, OBJECTIVES, LOGISTICS**	Wil Fontenot
9:00	**ADMC – PROGRESS AND COORDINATION OF NEEDS of FUTURE ACTIONS**	Charlie Schafer
	Items to be furnished by ADMC – do you need more time	
10:00	**BREAK**	
10:30	**Progress Reports by the State Teams**	
12:00	**Lunch**	
	GENERAL - PROGRESS ON PRIOR WORK & COORDINATION NEEDS	
1:00	• Training Development for ADMS	Pat Willey/Bill Boyd
1:20	• ADMS Effects on Greenhouse Gases	Dan Jaynes
1:40	• Design Criteria – Practice Standard approval progress in each ADMS state	Art Brate/Pat Willey
2:00	• Economics Impacts/Benefits of ADMS	Larry Brown/Gary Sands/Wayne Skaggs
2:20	**Discussion on how to handle the following:** • ADMS effects on other factors:	

	- Micropores/preferential flow: Manure/phosphorus - Effects on nightcrawlers/residue consumption soil health - Effects on cover crops and nitrogen harvesting	
2:50	**Break**	
3:10	• General Discussion on other questions and concerns: (Membership - Please submit topics. New topics could take us over into the next day or could call for rearranging the draft agenda?)	Topic Submitters
3:30	• Red River of the North – ADMS area? • Conservation Security Program & ADMS	Fred Kollmann "
3:55	ADMS and Buffers	Don Steck
4:10	Industry Led Solutions & ADMS	Wil Fontenot
4:30	Other Items and Recommendation for Fall Meeting (Lafayette, Baton Rouge, or New or New Orleans, LA)	Group
5:00	Adjourn Meeting	

PARTICIPANT LIST; ADMS St.PAUL MEETING-July 23,2004				
NAME	**GROUP**	**ADDRESS**	**PHONE**	**EMAIL**
Pat Willey	NRCS	101 SW Main Suite1600 Portland,OR 97204	503-414-3092	pwilley@wcc.nrcs.usda.gov
Fred Kollmann	NRCS	575 Lester Ave Onalaska, WI 54603	608-781-6706	fkollmann@usgs.gov
Jim Ayen	NRCS	210 Walnut; Federal Bldg STE 693 Desmoines IA 50300	515-323-2223	jim.ayen@ia.usda.gov
Art Brate	NRCS	200 N.High St. Rm 522 Columbus, OH 43215	614-255-2480	art.brate@oh.usda.gov
Mike Sullivan	NRCS	4000 McCain Blvd, Suite-204 N.Little Rock, AR-72116	501-758-2544(ext-115)	michael.sullivan@nsda.gov
Don Steck	FSA	5608 Galloway Dr. Oxon Hill, MD-20745	202-690-0224	Don.STECK@usda.gov
Jon Torbert	IDDA	3775 EP. True Pkwy #124 West Desmoines, IA-50265	515-221-1981	JTORBERTIDDA@mchsl.com
Jack Huggins	TNC	301 S.W. ADAMS PEORIA, IL-61602	309-636-3333	JHUGGINS@TNC.org
Mark Dittrich	MDA	90 W. Plato Blvd St.Paul, MN-55107	651-296-1482	mark.dittrick@state.mn.us
Andy Manale	EPA/UND-EERC	9612 Wine Ave. Silver Spring, MO-20901	301-589-4650 301-213-9500	APmanale@star.power.net
Dale Bucks	ARS	5601 Sunnyside Ave. Bellsvile, MD-20705	301-504-7034 301-504-4787	Dab@ars.usda.gov
Sheryl Kunickis	NRCS	14’th Indepndence Ave. SW Washington DC-20250	202-720-8723	sheryl.kunickis@usda.gov
Charlie Schafer	NRCS	P.O. Box 458 Adair, IA-50002	800-232-4742	Charlie@agridrain.com
Tom Davenport	USEPA	77 West Jackson Blvd. Chicago, IL-60604	312-886-0209	davenport.thomas@epa.gov
Matt Helmes	ISU	209 Davidson Hall Ames, IA-50011	515-294-6717	helmers@iastate.edu
Wayne Skaggs	N.C.S.U	Box 7625, Rayleigh, WC-27695-7625	919-515-6739	wayne_skaggs@ncsu.edu
Jermy Wright	U of MN	P.O.Box 471-WCROC Morris ,MN-56267	320-589-1711	jwright@umu.edu
Alex Echols	Sand County Foundation	1025 Connecticut NW Suite 610 WBH DC-20036	202-464-0100	echols@conrod.com

Gary Sands	U of MN	1390 Eckels Ave. St. Paul, MN-55112	612-625-4756	grsands@umn.edu
Jeff Stoner	USGS	2280 Woodale Dr Mounds View, MN-55112	763-783-306	stoner@usgs.gov
William Boyd	NRCS	101 E. Capitol Ave. St.B-100 Little Rock, AR-72201	501-210-8917	william.boyd@ar.usda.gov
Tyson Ochsner	ARS	1995 Buford Circle St.Paul, MN-55108	612-624-6158	ochsner@umn.edu
Dan Jaynes	ARS	2025 Pammel Dr Ames, IA- 50011	515-294-8243	jaynes@NSTL.gov
Norm Fausey	ARS	590 Woody Hayes Drive Columbus, OH-43210	614-292-9806	fausey.1@osu.edu
Leonard Binstock	Ellingson Cos	56113 St. Hwy 56 P.O.68 West Concord, MN	509-529-2294	leonard@ellingsondrainage.com
Eldon Bonnema	Hancor	6205 Richland Ave. SW Willma, MN	320-235-7320	ebonnema@hancor.com
Nancy Drummy	U-Wisc/Sand Co.Foundation			Ndrummy@power.net
Larry Clemens	TNC	Peach tree Plaza Suite 1220 N 200 W, Angola, IN-46703		lclemens@tnc.org
Wil Fontenot	NRCS	700 Cajundome Blvd Lafayette, LA 70506	337-291-3098	wildon.fontenot@usda.gov