To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As a federally funded environmental health sciences core center, we agree with actions taken to enforce the Clean Water Act with regard to the operation of large livestock facilities in the state of Iowa. The trend in swine, poultry, and cattle operations in the last 25 years has been toward fewer but increasingly larger operations. Today, more than 85% of the pork and poultry in the United States and Western Europe is produced in industrial livestock operations. Of U.S. swine production, 54% occurs in 110 industrialized facilities, each housing > 50,000 hogs, and 78.5% occurs in operations with > 5,000 animals-with the state of Iowa producing one-fourth of our country's pork (U.S. Department of Agriculture 2007).

One result of the increasing intensity of these operations has been a rising concern about contamination of surface waters with animal waste.
Manure is distributed to a limited, local landmass, resulting in soil accumulation and runoff of phosphorus, nitrogen, and other pollutants.
Lagoon breaches or manure pipe ruptures occur with regularity, and lead to significant surface water contamination, fish kills, and loss of recreational use of surface waters.

Our Environmental Health Sciences Research Center (EHSRC) has a longstanding history of conducting scientific research on the impacts of large livestock production on human health and the environment. In 2004, we convened a conference in Iowa City of scientists from North America and Europe to address major environmental health issues associated with these facilities. Priority areas identified included monitoring of whole watersheds in order to understand the effects of extreme events on ecosystem health, toxicologic assessment of water contaminants from Concentrated Animal Feeding Operations (CAFOs), and studies of primary effluents and metabolites in soils, sediments and water.

This group of experts identified a need for implementation of best management practices, through education and regulation to reduce CAFO
contaminants being released into surface waters and aquifers. They also
recommended the adoption of solid tanks for storage of manure, and in some cases, for municipal style waste treatment systems on site to limit microbial contamination of soil and water, prevent access to waterfowl, and limit the spread of disease.

There was also general agreement that the industrialization of livestock production over the past three decades has not been accompanied by commensurate modernization of regulations to protect the health of the public or natural public-trust resources, particularly in the United States. An expert panel brought together by the Pew Commission on Industrial Farm Animal Production in 2008 and 2009 came to similar conclusions.

There is sufficient information on the hazards of CAFOs to communities to warrant a more measured approach to siting and permitting of facilities.
Permits should consider watershed-level animal density and dispersion of air emissions. Our center has recommended that an Iowa Department of Natural Resources (DNR) surveillance program include production facilities, lagoons, land on which manure is applied and rural private well water in areas at high risk for contamination.

In addition to measuring biochemical oxygen demand (BOD) in waters, emerging contaminants such as veterinary pharmaceuticals (including antibiotics and anabolic hormones) should be measured both in water and in fields where manure is applied. The Pew Commission on Industrialized Farm Animal Production (2008) estimates that, "Currently, only half of all antibiotics are slated for human consumption. The other 50% are used to treat sick animals, as growth promoters in livestock, and to rid cultivated foodstuffs of various destructive organisms." This low-level dosing for growth and prophylaxis ultimately results in the development of bacterial resistance in or near livestock and harbors the potential to diminish the effectiveness of antibiotics for the treatment of human disease.

We appreciate the concerted attention the Iowa Environmental Council is giving this issue in our state and support all efforts to improve and maintain water quality levels that promote and sustain the environment and health of our citizens.

Sincerely,

Peter S. Thorne, PhD
Director
Environmental Health Sciences Research Center The University of Iowa Iowa City, IA 52242
http://ehsrc.org

Nancy Wyland
100 Oakdale Campus, #176 IREH
University of Iowa
Iowa City, IA 52242-5006
nancy-wyland@uiowa.edu

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa. The strategy should also include minimum vegetative buffer distances along the waters of the state.

Steven Zeets
2690 Copper Dr
Marion, IA 52302-7302
cczeets@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jonathan Rosenbloom
4015 Ashby Avenue
Des Moines, IA 50310-4109
jonathan.rosenbloom@drake.edu

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Emily Zeets
247 Lambeth Road
Waterloo, IA 50701-1633
emzeets@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Karen Steelman
2639 I Ave
Williamsburg, IA 52361-8538
mustang6@netins.net

To whom it may concern:

I currently live in Dubuque and cross the Mississippi every day on my way to work. Before this I lived in Spirit Lake for several years. I have seen our Iowa waterways turn murky and brown from pollution and this is very disturbing - even frightening for our future.
I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Joy Peterson
3175 Pennsylvania Ave
#210
Dubuque, IA 52001-5333
563-588-2008
jprejoice@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Alan Eggenberger
5000 Emerson Dr
Ames, IA 50014-7707
ale@iastate.edu

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. Water quality in Iowa consistently fails to meet my expectations and remains poor despite years of efforts.

Iowa's nutrient reduction strategy needs to clearly state how ALL of those who are causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. Strategies for municipal and agricultural pollution sources will be different, but both must take real action for meaningful results. Mandatory water treatment action by cities alone will not produce meaningful results. There must be commitment from agriculture.

The strategy needs to establish accountability, with clear numeric goals for nitrogen and phosphorous pollution reduction, tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions are not met on areasonable timetable.

The goal of the strategy must be meaningfully cleaner water in Iowa.

Ruth Kneile
140 SW 51st Street
Des Moines, IA 50312-2142
515-255-1377
ruth.kneile@gmail.com

To whom it may concern:

Two things we should do right now and that the policy of the Iowa Nutrient Reduction Strategy should reflect is to encourage through state tax policy use of no-till agriculture. At the county level, property taxes should be higher for land that produces nutrient and topsoil runoff. This county level tax should be based on land area or amount of documentable runoff so that it applies to all property, not just agricultural land.

As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor, and I know we can do better. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved. The only positive review of our current policy of voluntary cleanup of our water, which this plan perpetuates, is to hear that the situation could be worse. Hardly a ringing endorsement.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Ben Allen
3816 Cottage Grove Ave
Des Moines, IA 50311-3606
benjaminwilliamallen@me.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Robert Sellers
11 Pelican Dr
Council Bluffs, IA 51501-8403
712-366-2454
rdsel3@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Kathy Fritchen
2498 235th St
Fort Dodge, IA 50501-8465
wweeds@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Marlene Shaw
1449 NW 71st Place
Ankeny, IA 50023-9697
mjweshaw@msn.com

To whom it may concern:

As a resident of Poweshiek county and living on a small farm I try very hard to build the land I own. However our well water is contaminated to the point that my hair stinks after shampooing as well as our towels after laundering. Our neighbor has a cattle confinement across the road from us and a new hog confinement is coming in the area. I only see the water condition getting worse. As a child living on this farm the well water was WONDERFUL. WHAT HAS HAPPENED?

As an Iowan, I live in a state where water quality consistently fails to meet my expectations. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Cecily Unruh
5008 80th St
Montezuma, IA 50171-8510
641-623-1955
cdunruh@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Rhonda Oviatt
2471 Hiatt Apple Trail
Winterset, IA 50273-8113
mrjoviatt@aol.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Joan Jess
20902 322nd Ave.
Bellevue, IA 52031-9286
563-872-5542
runningbearmama@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Tiffany Krcil
3805 10th St
Des Moines, IA 50313-3311
fieryrapture@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Ann Vorhees
900 Sherrlynn Blvd.
Pleasant Hill, IA 50327
avorhees09@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Samantha Cain
335 East 5th St.
Ottumwa, IA 52501-2716
641-856-7305
melnmom@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Carla Heathcote
2529 Stafford St
Dubuque, IA 52001-2060
563-583-0293
cmheathcote@mchsi.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Lynn Gallagher
4674 Sutliff Rd NE
Solon, IA 52333-9044
abbipw@southslope.net

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jeff Benz
3010 E Jefferson Ave
Des Moines, IA 50317-8643
solarbtu@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

L M Fendt
834 Park
Grinnell, IA 50112-2148
fendtlm@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Frank Pearson
7 Bittersweet
Mason City, IA 50401-2555
641-425-8660
fjpearson@live.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Tim Chicoine
6080 Nixon Street
Saint Charles, IA 50240-9077
iarivers@live.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Toby Welch
22481 230th Street
Dallas Center, IA 50063-8365
toby.welch@co.dallas.ia.us

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Gina Nauman
1425 Lilac Lane
Cedar Falls, IA 50613-5359
gina.nauman@foth.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Sarah Doxon
1012 E. 17th St. #313
South Sioux City, NE 68776
sarah.thomsen07@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Michelle Garcia
715 Hickman Road
Des Moines, IA 50314-2900
515-422-1964
michelekgarcia@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Heather Wachendorf
1618 Main Street
Adel, IA 50003-1325
hlwia@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jack Carlson
Box 1954
Iowa City, IA 52244-1954
jackc846@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

On a holiday trip to another state I was appalled to see Iowa's water pollution--by the agricultural industry--featured in those newspapers. We are polluting the whole Mississippi River! This issue must be addressed with REAL accountability.

Anita Shekinah
432 7th Street
West Des Moines, IA 50265-4517
ajshekinah@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Joseph Otto
1510 Morland Ave.
Norman, OK 73071
jwotto@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Carrie Ries
3418 Coy Street
15
Ames, IA 50014-7597
515-450-1092
carrieries@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Leslie Crow
422 E State St
Colfax, IA 50054-1523
83crow@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Margaret Vernon
401 West Ashland
Indianola, IA 50125-2425
515-961-6748
mmvernon@earthlink.net

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts.

The plan fails to hold farmers accountable to stop tilling right to the banks of creeks. I am sick of seeing brown water full of fertilizer chemicals flow off their fields. I am sick of seeing trenches form in fields to carry the chemicals and soil to our streams. I live in rural Iowa and I see it after every hard rain.

I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jan Heeren
11509 Saint Patricks Rd
Fairfax, IA 52228-9722
319-431-1371
jan_heeren@southslope.net

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Lynn Laws
4651 Lockner Drive
Des Moines, IA 50322-1871
lynnlaws@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Sarah Lohmeier
5701 Waterbury Rd
Des Moines, IA 50312-1329
515-770-4064
sclohmeier@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Philip Klein
454 Sierra Trl
Coralville, IA 52241-1124
phil-klein@uiowa.edu

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Kim Strunk
25265 35th Ave.
Walcott, IA 52773-9529
563-386-5500
strunkk@davenportschools.org

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Robert Sessions
222 Fairview Ave
Iowa City, IA 52245-4426
319-338-5627
sessions.bob@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Diana Sanders
2711 Highway 9/71
Spirit Lake, IA 51360-7256
712-336-2273
djsanders423@msn.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Laura Clements
2131 Willowmere Dr
Des Moines, IA 50321-1537
clements.laura@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Nancy Jones
604 1st St
Plano, IA 52581-8583
nrjones51@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Gordon Garrison
1386 340th Ave.
Estherville, IA 51334-7010
gordonb50us@yahoo.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

James Dodd
2248 K Rd
Humboldt, IA 50548-8779
jdodd50@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Craig Johnson
1030 Burr Oaks Drive
West Dees Moines, IA 50266-6619
515-440-0295
craig.johnson@wfadvisors.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Marlene Dietz
127 Coumtry View Dr
Hudson, IA 50643
319-988-4650
Mdietz4650@aol.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Nancy Garretson
1033 Clared Circle
West Des Moines, IA 50266-4918
ngarretson@mchsi.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jim Hasty
2471 Navaho Ave.
Denver, IA 50622-1091
319-404-0650
hasty89@hotmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As a native Iowan and Greene County farm owner, I am aware that the state's water quality consistently fails to meet reasonable expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Carole Depould-Newmark
227 Toyopa Dr.
Pacific Palisades, CA 90272
cnewmark@msn.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The Iowa nutrient reduction strategy falls short. Beyond a mere reference of confinements in the summary, the current and future negative impact on water quality from animal livestock confinements (CAFOs) is not even addressed or considered. This is a serious oversight, given that confinements produce millions of gallons of manure and are a significant nonpoint source of water pollution.

In particular, there is no mention of how to address the negative impact on water quality due to the unchecked growth of the number of confinements, the increased chance of over-application of manure due to overlapping manure plans, or the probability of significant water quality impairment when confinement construction is not limited in subwatersheds already defined as high priorities for the reduction of nitrates.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Patricia Fuller
26 Pickard Lane
Council Bluffs, IA 51501-8358
712-366-0423
patriciafuller1@hotmail.com

To whom it may concern:

The state of Iowa requires substantial efforts on the part of its citizens to mitigate the negative impact of human waste. The most insignificant household is requires to have a functional and effective ceptic system.
Tiny towns must spend great amounts of money to process human waste.
There are only about three million people in Iowa while there are between
14 and 15 million hogs at any one time in the state, each of which produces at least twice as much waste as a human. But the state of Iowa requires nothinmg of the hog producers to mitigate the negative effects of hog waste other than to cover it up with a couplke inches of dirt. Why is this same method not sufficient for human waste? What is the difference?
If unprocessed human waste is not good for the environment then how is hog
waste better? The state of Iowa MUST recognize that the continued
practice of injecting untreated livestock waste into the same ground from which we humans are extracting our drinking water. The Iowa Depatment of Natural Resources needs to address the question of whether the business of raising hogs is more important than health of the citizens for whom the hogs are being raised. For this reason the Iowa DNR needs to examine the confinement livestock industry with the same scrutiny that any waste producing community is examined and apply the same rules to businesses whether whether they focus on humans or any other animal. We as human citizens are routinely discriminated against by the DNR in favor of hogs.
It saddens me that my children and grandchildren are not valued by the DNR as much as a hog in a confinement building.

Allan Sieck
2280 U Ave
Rippey, IA 50235-7023
515-436-7450
hensbob@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Ralph Jones
1537 Roosevelt Ave.
Ames, IA 50010-5261
rj.hank48@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

My strong opinion is that we need to move beyond voluntary efforts for non-point source pollution reduction. The failure of these voluntary efforts in Iowa has been abysmal. Other states in the midwest had adopted mandatory standards, which have provided much improved water quality in those states.

The largest barrier to mandatory pollution control efforts appears to be Iowa's large and powerful agriculture lobby. I am not a farmer, but come from a farming background. I need cleaan water too.

Thanks for listening.

Sandra Simmons
2101 55th Street
Des Moines, IA 50310-1556
515-343-0512
sandra_964@hotmail.com

To whom it may concern:

I am increasing appalled by the measely attempts by our underfunded and unmotivated DNR department to protect Iowa's environment. Whatever the problem, this needs to be fixed. The Iowa people overwhelmingly voted for a tax increase to protect our environment. What better mandate do you need than the vote of the people to know that Iowans want clean water and air! Quit ignoring the people in favor of big business profits.

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Susan Walsh
1 Lakewood Villa St
Council Bluffs, IA 51501-8223
susan.walsh@cox.net

To whom it may concern:

I am writing to present my comments on the Iowa Nutrient Reduction Strategy. I have lived my entire life in Iowa where water quality consistently fails to meet expectations and remains poor despite years of efforts. I and thousands of other Iowans must travel out of state to find opportunities to enjoy truly clean water. I appreciate the significant efforts that the Nutrient Strategy represents and I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I am however dismayed to learn that the implementation of nonpoint control measure will rely on voluntary actions to adopt nutrient reductions management practices. The Strategy includes no evidence to suggest that these voluntary actions will in fact occur nor does the strategy provide any yardstick by which to measure the success or failure of these voluntary efforts.

Numerous scientific studies make it clear that two practices, no till and limiting nitrogen applications to the growing season can significantly impact phosphorous and nitrogen pollution and in most cases will actually increase profit margins. Despite the clear economic and environmental advantages of widespread adoption of these two practices the Strategy continues the failed policies of "voluntary" conservation. Fall application of anhydrous ammonia fertilizer could be discouraged by adding significant fees to the purchase price of fall delivered anhydrous. A fee structure would discourage fall application, reduce nitrogen loss,
increase profits and could be structured to be revenue neutral. We
could also create fees to encourage the adoption of no till farming practices. For example property tax surcharges for failure to adopt no till farming practices would provide farmers with a clear financial incentive to adopt this and similar conservation practices. Fees if
appropriately structured can and will change behavior.

I have a more general comment. I don't believe that the Strategy and supporting documentation mention the changes in climate that are and will continue to impact agriculture. Some changes such as longer growing seasons will impact nutrient reduction strategies that involve cover crops, timing of anhydrous application and others. Some change such as more extreme precipitations regimes will impact constructed practices such as terraces, tile systems, bioreactors, filter strips and wetlands among others. The continued increases in extreme weather suggest that long range plans such as the Strategy must seek and implement solutions that are resilient as well as effective.

Iowa's nutrient reduction strategy must clearly state how those who are responsible for the dismal quality of water in Iowa will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture. Again cleverly constructed fees and other economic incentives can and should be used to encourage the agricultural industry to keep valuable nutrients and soil resources on the land where they are an asset and out of the waters of the state and nation where they are a liability.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Patrick McAdams
2282 Teller Avenue
Rose Hill, IA 52586-9504
641-632-8308
mcadamsp@wmpenn.edu

To whom it may concern:

IMPACT OF CONFINEMENTS NOT EVEN ADDRESSED IN PLAN

The Iowa nutrient reduction strategy falls short. Beyond a mere reference of confinements in the summary, the current and future negative impact on water quality from animal livestock confinements (CAFOs) is not even addressed or considered. This is a serious oversight, given that confinements produce millions of gallons of manure and are a significant nonpoint source of water pollution.

In particular, there is no mention of how to address the negative impact on water quality due to the unchecked growth of the number of confinements, the increased chance of over-application of manure due to overlapping manure plans, or the probability of significant water quality impairment when confinement construction is not limited in subwatersheds already defined as high priorities for the reduction of nitrates.

How can the nutrient reduction strategy succeed when CAFOs - a significant source of the problem - are not even considered or accounted for in the strategy?

Increase in CAFOs:
Last year, 14 applications for new construction or expansion of existing hog confinements (requiring manure management plans) were approved in Greene County alone. The county now has 69 hog confinements and more than
240,000 hogs (source DNR CAFO database). The N. Raccoon River - identified as already having a high nitrate problem - runs through the county. The new or expanded hog CAFOs are projected to produce approx. 10 million MORE gallons of manure per year, bringing the total annual hog manure production in Greene County to more than 50 million gallons. The nutrient reduction plan does not address the increase in the amount of manure produced by new or expanded hog confinements across the state. It is surely reasonable to assume that a portion of that additional manure will ultimately enter our waterways and the plan should address this likelihood.

Over-Application of Manure:
More confinements also mean the probability that over-application of manure may occur due to overlapping manure management plans (MMPs). The DNR currently has no mechanism in place to check for overlapping MMPs. In 2012, Prestage Farms was approved construction for PI312, a 4900-head hog confinement in Washington Township, Greene County. The MMP for PI312 overlapped with another CAFO's MMP, resulting in the potential for over-application of manure on the land in the plans. The DNR only became aware of this overlap when neighbors opposing the CAFO construction discovered it and notified the DNR. The nutrient reduction plan does not address measures to prevent such overlap and thus does not limit the increased potential for over-application of manure.

Construction on Priority Subwatersheds:
There are no measures currently in place to restrict confinement construction on subwatersheds that have already been identified as very high priorities for the reduction of nitrates. In 2012, Prestage Farms was approved construction for PI355, a 4900-head hog confinement in Washington Township, Greene County. This CAFO was built on land in Fanny's Branch of the N. Raccoon River. Fanny's Branch has received significant MRBI funds

(NRCS) for nitrate reduction study and has also been identified in the Raccoon River Water Quality Master Plan (M&M Divide RCD for DNR 2012) as a very high priority subwatershed for targeting the reduction of nitrates.
However, even though residents opposing the construction of the CAFO pointed this out to county and DNR officials, the information was not even taken into consideration when the permit application was reviewed and ultimately approved. While the nitrate reduction strategy mentions that priority subwatersheds will be identified, there is no indication in the plan regarding what restrictions will be placed on what types of activities in those watersheds. In particular, there should be acknowledgment that restrictions should include prohibiting or limiting CAFO construction, particularly given that concrete manure pits can crack and ultimately leak manure into the watershed.

Summary:
The nutrient reduction strategy needs to include measures to account for the impact of current and future hog confinements - a significant nonpoint source of water pollution - or it will ultimately fail in making any significant progress in reducing nitrates in our water.

Chris Wilbeck
2244 U Avenue
Rippey, IA 50235-7023
515-229-6988
chris@farmhouselife.com

To whom it may concern:

It is my understanding that you are reviewing a plan or strategies to improve Iowa's deficiencies in clean water. Please note that I own farmland in an area where a lot of water pollution can be traced to an abundance of hog confinements. As a farmer, I am not opposed to hog farming, but I am stunned that your report makes no mention of the impact (and subsequent necessary remediation) caused by this intensive practice and the resultant manure, which is spread on farm fields. You cannot realistically claim to assess and improve water quality in Iowa without taking confinements into account. Surely you do not purposefully omit this important item!
Thank you for your time and your desire to obtain citizen input.

Phyllis Lepke
13746 500th Ave.
Story City, IA 50248-8658
phyllislepke@hughes.net

To whom it may concern:

It is disheartening to me that Iowa has not been in constructive compliance with the Clean Water Act, dating to the 1970s, since its passage.

At the time, industrial pollution received more attention than agricultural, with some justification. But Iowa's agricultural pollution sources have magnified since then, largely due to changes in the ways we plant crops and raise livestock. These changes have increased the state's contributions to air and water pollution.

In response to the US Environmental Protection Agency, the Department of Agriculture and Land Stewardship, with Iowa State University, has produced the Nutrient Reduction Plan. I am embarrassed at how poorly it relies on scientific data in its evaluation of and reduction strategies for nutrient pollution.

As a policy document, the strategy fails in several ways: (1) it places disproportionate responsibility on urban nutrient sources, and in doing to, it will not assist with significant changes in the cleanliness of Iowa's waters or the Gulf hypoxia problem. (2) It singles out nitrogen as the only nutrient problem in Iowa's surface waters, when phosphorus also is an important issue. (3) It places our state agencies and a Regents'
institution in the embarrassing position of having to defend vague and scientifically unsupportable gestures at clean-up.

The EPA is correct to keep the pressure on the state. It is my hope that the current legislative session will shoulder the responsibility, along with high-level Executive Branch officials, to build and maintain an effective system of enforcement and inspection for livestock production facilities and so-called "non-point" sources of pollution such as field tile outlets.

It is also my hope that our policy makers will acknowledge the importance of natural systems, not just future technologies and voluntary compliance, as solutions in keeping liquid wastes in place and providing filtration of nutrients. It is also possible that any solutions will play a role in lessening downstream flooding that has become too frequent in the last two decades.

The Clean Water Act was good policy in 1972. It continues to pay out far above its costs to the US economy. It's time for Iowa to recognize this and implement the required enforcements and policies to achieve this return on investment.

Leland Searles
4102 River Oaks Dr.
Des Moines, IA 50312-4643
515-979-6457
searleslr@msn.com

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
210 Walnut Street, Room 693
Des Moines, IA 50309-2180

January 17, 2013

Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, Iowa 50011-1010

Thank you for the opportunity to review and respond to the *Iowa Nutrient Reduction Strategy* and the *Iowa Nonpoint Source Nutrient Reduction Science Assessment*.

We want to take this opportunity to once again thank Secretary Northey for his leadership in addressing nonpoint source pollution and setting nutrient load reduction goals. We recognize the tremendous effort and extensive amount of time behind these reports. Natural Resource Conservation Service (NRCS) appreciates the leadership the Iowa Department of Agriculture and Land Stewardship (IDALS) is providing and the technical expertise provided by Iowa State University and the collaborating agencies. Thank you for including NRCS in the science assessment.

The *Iowa Nutrient Reduction Strategy* and the *Iowa Nonpoint Source Nutrient Reduction Science Assessment* are important documents and represent a significant step forward in our state's efforts to address water quality. NRCS is especially interested in Section 2, the Nonpoint Source Nutrient Reduction Science Assessment, and the parts of Section 1 dealing with nonpoint source water pollution. The comments below deal with these sections.

Section 2: Nonpoint Source Nutrient Reduction Science Assessment.
The science assessment demonstrates that the 45% reduction goal of N and P is achievable and describes several possible pathways to that goal. These are significant accomplishments.

The document assesses the potential of specific conservation practices to achieve numerical water quality nutrient reduction goals. This is another very significant accomplishment. This document highlights there is no magic bullet -- no single technology -- which will solve this problem. Rather, it demonstrates that a suite of practices is needed. This is consistent with NRCS's conservation planning concepts and our conservation systems approach to avoid, control, and trap nutrients. This report provides a valuable analysis of measured water quality impacts of these technologies – especially the delivery of nitrates – which will assist in conservation planning.

We do have some concerns about the science assessment, many of which are recognized by the assessment team in their report, but still need to be highlighted.

The science report is based on published, peer reviewed data for Iowa and adjacent states, a justifiable approach. However, since there may be a long-term research bias for corn and soybean production in Iowa and conservation practices tied to these two crops, the report reflects that bias by having limited information on potentially viable alternative cropping systems and conservation practices. For instance there may be viable alternative crops and rotations which require less added nitrogen or can more efficiently trap nutrients throughout the soil profile or for more months of the year. Part of the strategy should reflect non-traditional opportunities for agricultural production which inherently have less water pollution potential. The strategy should chart a path to investigate both their potential to significantly reduce nonpoint pollution and their economic viability.

Additionally, limiting the analysis to data from just Iowa and adjacent states may have been unduly restrictive for some conservation practices. Data from Indiana, Ohio, and Michigan for cover crops, drainage water management, no-tillage, etc., may have provided additional, quality information that is appropriate when local data is limited.

For some conservation practices, which are management intensive (e.g. cover crops, no-tillage, and drainage water management), the data did not distinguish among the nutrient management, crop production, and economic impacts when the systems were poorly managed versus well managed. Cover crops are one clear example. If not properly managed, the cover crop may not function as effectively to scavenge nutrients or may end up competing with the cash crop for water and nutrients.

Thus while the report highlights the potential for cover crops to achieve nutrient reductions in water, it indicates that the cost is very high due, in part, to the potential reduction in corn production. As evidenced during the recent "Cover Crops: Practical Strategies for Your Farm" conference hosted by the Soil and Water Conservation Society producers with many years of experience in cover crops have learned to manage risks to production. We encourage you to re-examine the cover crop data to determine, if possible, which management strategies work best for environmental, production, and economic performance. Given the small number of studies, we recognize this may not be possible. But ask that you consider selecting cover crop viability as a research priority.

We believe there are tremendous opportunities for innovative ideas to improve cover crop performance including new cover crop species, improved cultivars, multiple specie mixes, planting method and equipment, seed cost, timing of planting and termination, and termination methods.

The data used to analyze no-till production appears to have used predominantly short- term or rotational no-till research. Short-term and long-term, continuous no-till systems are very different both in terms of the impacts on nutrient management and on crop production. Only in long-term no-till can we expect to see changes in soil quality which are beneficial for crop production. We would also expect to see even more improved environmental performance in a continuous no-till system. Short-term and long-term no-till should be evaluated separately.

In general, we believe you should consider the long-term, aggregate impacts of conservation practices such as erosion control, cover crops, high-residue crops in rotation, and reduced tillage or no-till on both our soil's crop production potential and their capacity to hold and cycle nutrients. The studies used do not appear to account for improvements in soil performance due to increased organic matter, microbial activity, and soil structure when the conservation practices are maintained over the long-term. Alternatively, they do not account for the environmental and economic impact of agricultural systems which degrade the soil over time. Changes in soil quality and the subsequent long-term impact on production and water quality should be considered when evaluating conservation systems.

The report does not distinguish the relative value of in-field versus edge-of-field practices. The report confirms that nutrient management, cover crops, extended rotations, perennial crops, and pastures are effective nutrient reduction practices. In-field technologies, such as these, address water quality issues systemically and robustly. For nitrates, in-field conservation technologies protect both tile line water and groundwater. Edge-of-field technologies such as filter strips, nutrient-treatment wetlands, and bioreactors, while effective at treating tile line and other surface/near surface water, have limited impact on groundwater. We believe that in-field conservation practices should be a priority.

The data in the assessment indicating very little water quality advantage from moving N application from the fall to the spring contradicts conventional wisdom. Given what we know about the risk of nitrate loss, especially in the late winter and early spring, we are concerned about the validity of this conclusion and ask that it be re-examined.

The report accounts for stream bank and channel erosion and legacy sediments as phosphorus sources (perhaps as much as 50% of the P load). However, the report fails to discuss the technologies, costs, and benefits of stabilizing these systems. This needs to be addressed.

Some key and promising practices such as denitrifying bioreactors and constructed wetlands are new and their N trapping capacity is based on limited data. Actual effectiveness, long-term viability, maintenance issues, and potential of unintended consequences are not adequately known. While we support the implementation of these conservation practices, we suggest continued work to design optimal systems and develop maintenance criteria and infrastructure. Secondary impacts also need to be examined and mitigation needs for those impacts need to be accounted.

Executive Summary and Section 1: Policy Considerations and Strategy.
We recognize and concur with the emphasis on voluntary conservation efforts to achieve nutrient reduction goals. We encourage the full engagement of the agricultural community in activities to achieve these goals. There are some specific issues in the strategy we would highlight.

The strategy item - Strengthen Outreach, Education, Collaboration: Expanded Agribusiness Consulting (p.18-19) is a key goal that needs additional detail. The Iowa Certified Crop Advisor

(CCA) Association and the Agribusiness Association of Iowa could provide leadership. Clear guidance, promotional materials, planning tools and data management tools could be developed to assist the CCAs . A business model to separate agronomic consultation from fertilizer sales could be developed and promoted. Some businesses are already providing leadership to address nutrient reduction. See the Agriculture's Clean Water Alliance *Code of Practice for Nitrogen Fertilization* for a sample model.

Determine Watershed Goals (p. 15). Also Accountability and Verification Measures: Regarding nonpoint source (p. 21). The strategy to develop indicators and tracking mechanisms is important. Of note is the commitment to go from HUC 8 to selective HUC 12 monitoring. Importantly, the strategy adds other valuable indicators (e.g. crop performance, economic, social/cultural, conservation practices, fertilizer application) to the water quality indicators to be monitored. Collecting enough of this information is a Herculean task well worth the effort. How this will be done and paid for needs to be developed.
Institutional Capacity. The Iowa Water Resources Coordinating Council (WRCC) is listed as providing "coordination, oversight and implementation of this strategy" (p. 12). This Council was not engaged in writing the strategy. It is not clear what their role will be; neither is the role of the Iowa Watershed Planning Advisory Council (WPAC).

NRCS was previously involved in the development of the Iowa DNR strategy outlined in the report *Planning for Water Quality: July 2012 Iowa's Nonpoint Source Management Plan* which also addresses nonpoint source pollution. It is unclear how the *Iowa Nutrient Reduction Strategy* and the IDNR plan are to be coordinated and thus how NRCS can best provide support to achieve Iowa's water quality goals.

A lot of work went into the science assessment and the development of a strategy. The document is an excellent tool to assess technologies to address nonpoint source pollution and to set priorities. It also identifies additional needed research and innovation. The goal to reduce total nitrogen and total phosphorus by 45% and the strategy to achieve it are commendable and create a tremendous challenge for the agricultural community. As a part of that community we look forward to working with Secretary Northey, IDALS, the Soil and Water Conservation Districts, IDNR, ISU, agribusiness, producers, and others to create a more detailed plan of work to implement a strategy to address nonpoint source pollution.

Sincerely,

Jay T. Mar
State Conservationist

Iowa Association of Water Agencies

January 17, 2014

Dean Lemke
Iowa Department of Agriculture and Land Stewardship
Wallace Building
502 E. 9th Street
Des Moines, Iowa 50319

John Lawrence
Iowa State University
132 Curtiss
Ames, IA 50011

Adam Schnieders
Iowa Department of Natural Resources
Wallace Building
502 E. 9th Street
Des Moines, Iowa 50319

RE: Iowa Nutrient Reduction Strategy

Gentlemen:

This is to provide the Iowa Association of Water Agencies (IAWA) comments regarding the Iowa Nutrient Reduction Strategy (Strategy). IAWA's membership is comprised of municipal and rural drinking water utilities that serve a population of 10,000 or more. Collectively, our member utilities provide drinking water to approximately 1.2 million Iowans.

IAWA and its member utilities recognize both the need for and the benefits that will be realized with the reduction of nutrient loadings to Iowa waters. The targeted 45% reductions of nitrogen (N) and phosphorous (P), if achieved, will not only reduce nutrient loadings to the Gulf of Mexico but will also greatly enhance the quality of the state's water resources and their beneficial uses for all Iowans. Consequently, IAWA generally supports the Iowa Nutrient Reduction Strategy. Although supportive, IAWA does have some reservations and comments regarding the proposed Iowa Nutrient Reduction Strategy and its implementation.

IAWA commends and is generally supportive of the Strategy based on the following considerations:

- IAWA recognizes the need for and benefits to be realized from the implementation of the Iowa Nutrient Reduction Strategy. IAWA considers the Strategy to be a "small, first-step in the right direction" of enhancing and protecting Iowa's water resources.

Iowa Association of Water Agencies
2201 George Flagg Parkway, Des Moines, Iowa 50321
515-283-8706 kinman@dmww.com

- The Strategy and accompanying documents provide a good overview of the nature and scope of the current nutrient loading challenges in Iowa as well as the challenges we will face in the efforts to achieve meaningful reductions from both point and non-point sources.

- IAWA commends the stated commitment to develop an integrated plan that is based on sound science and attempts to incorporate factors such as best available technologies and cost-benefit analyses.

IAWA would also offer the following observations and concerns as well as suggestions that we believe will strengthen and facilitate a better understanding of the need and benefits of the Iowa Nutrient Reduction Strategy:

- IAWA notes that the Strategy document has just a few limited references to the local water quality benefits that will be realized with the reduction of nutrient loadings. We believe that the Strategy document should include additional discussion regarding enhanced water quality and its benefits for drinking water sources, recreational and aquatic habitats. The Strategy should stress that these "local" benefits will also provide an enhanced quality of life and economic benefits to all Iowans. IAWA offers to provide a representative to serve on the Science Advisory Panel or other stakeholder group organized for future discussions, establishing goals and setting timelines.

- Based on the contribution of nutrients, the Iowa Nutrient Reduction Strategy would appear to require point sources (large municipal and industrial NPDES holders) to provide a disproportionate percentage of the stated nutrient reduction goals. The targeted reductions goals are fairly explicit and will be extremely expensive to achieve. These costs will be borne directly by the municipal utility rate payers and the affected industries. We believe the Strategy should more fully recognize the burden that will be borne by industrial and municipal point sources.

- Similarly, the Iowa Nutrient Reduction Strategy is somewhat vague regarding the extent of the nutrient loading reductions needed to be achieved by non-point sources and the proposed plan of action in the event that the proposed voluntary actions fail to achieve the targeted reductions.

- Per the Strategy document, the current respective contribution by point and non-point sources of nutrient loadings to Iowa waters is as follows:

Iowa Association of Water Agencies
2201 George Flagg Parkway, Des Moines, Iowa 50321
515-283-8706 kinman@dmww.com

	Nitrogen	Phosphorous
Estimated Total Tons per Year – All Sources	275,000 Tons/Yr	13,563 Tons/Yr
Point Sources (Municipal and Industrial)	8%	20%
Non-Point (Agricultural)	92%	80%

The document also indicates that full implementation of the Strategy will achieve the following approximate reductions of the nutrient loadings from point sources:

Point Sources	Current% Contribution	Targeted Reduction	Projected Overall Reduction
Nitrogen	8%	66.7%	5.4%
Phosphorous	20%%	75.0%	15%

The above exercise illustrates that targeted reduction goals for point sources would only provide a small percentage of the overall 45% reduction goals for both nitrogen and phosphorous. In fact, elimination of **all** nutrient loadings from point sources would only provide for an overall reduction of 8% for nitrogen and 20% for phosphorous. The math and economics of the nutrient loadings dictate that the preponderance of the needed reductions to fill "the gap" will have to come from non-point sources. Unfortunately, the Strategy document does not fully address the mechanisms or timelines for achieving the reductions needed from non-point sources.

We hope that these comments and suggestions will be helpful.

Thank you for your consideration.

Sincerely,

John North
Executive Director, on Behalf of the Board of Directors
Iowa Association of Water Agencies

Cc: IAWA Board of Directors and Member Utilities

Mr. Chuck Gipp, Director,
Iowa Department of Natural Resources

Mr. Bill Northey, Secretary of Agriculture
Iowa Department of Agriculture and Land Stewardship

Iowa Association of Water Agencies
2201 George Flagg Parkway, Des Moines, Iowa 50321
515-283-8706 kinman@dmww.com

January 17, 2013

The attached materials represent the Environmental Working Group's comments on the state nutrient strategy. While we have strived to give the strategy the review warranted by the state's nutrient crisis, the abbreviated public review period and vast extent of the science assessment made that impossible. As such, we have focused our attention on the most important concerns with the document in broad terms. Were time to allow, we would offer significant additional commentary on specific points of the strategy.

On the whole, we find the strategy largely inadequate to address the task at hand. While it does represent a solid effort at assessing the requirements and establishing the basic vision for an eventual strategy, and we find the science assessment to be extremely valuable, the document as a whole lacks the fundamental planning elements that would be inherent parts to a proper strategic document. We include in our comments suggestions and process recommendations to address noted deficiencies.

We look forward to seeing the strategy advanced, and look forward to participating in the effort to implement the research and land use changes required to make it a success.

Thank you,

Craig Cox, Andrew Hug, Brett Lorenzen and Soren Rundquist
Environmental Working Group
103 East Sixth Avenue
Suite 201
Ames, Iowa 50010
515-598-2358

EWG Comments on the Iowa Nutrient Reduction Strategy

GENERAL COMMENTS

The strategy outlines no firm operational goals or milestones by which to track progress for non-point source pollution.

Non-point source pollution, primarily from agricultural land, contributes the vast majority of the nutrients at issue in the strategy. The strategy outlines no goals, timelines or specific reduction measures to which agricultural non-point source pollution will be held. Similarly, it outlines only basic needs for additional monitoring, and provides no means to measure immediate or short-term progress. These are integral elements of any strategy document.

At best, the strategy document as written provides background for the actual discussion of a strategic plan. It is at present merely a "vision statement."

Last year, a body of more than 40 citizen stakeholders and industry groups, guided by the DNR, produced a ten year Non-point Source Management Plan. That group was able to outline ten year's worth of statewide priorities, assign them to timelines, and recommend specific actions, targets and annual measures of progress. The process for developing the Nutrient Reduction Strategy has already taken twice as long and included the substantial assistance of ISU researchers in creating 90% of the written material. At a very minimum a state developed plan should be able to match the level of detail of the citizen driven effort when complete.

While the strategy recommends that these questions be answered over time by a variety of bodies, EWG recommends that the final strategy include at least a five-year outline for an introductory operational plan, denoting specific outreach and organizational targets, specific organizational responsibilities, watershed designation and organizational development goals, staffing requirements, funding expectations and needs, required priorities for DNR and IDALS commitments, and milestones for the first five years. Results will not be achieved if expectations are not set. This process should involve a wide variety of stakeholders, and be conducted on an expeditious timeline (less than one year). Attention should also be given to establishing a permanent public process for convening a balanced committee of citizen representatives to develop updated strategies and audit progress every five years.

During this time, IDALS and DNR could also address the shortcomings in funding analysis and budgetary outlines noted below.

The strategy contains inadequate analysis of implementation costs and funding needs.

While we understand that IDALS and the DNR can only make funding recommendations, outline expected funding needs, and directly control only the money in their own budgets, the strategy does not even address funding and budgets at this most basic level.

While the strategy does include very crude estimates of total cost, and a basic breakdown of annualized costs, it provides no serious informative details on what those costs would involve at any stage of the process, nor does it provide the supporting basis for estimates of administrative and establishment costs. Similarly, where project costs or resources could potentially come from re-assignment of existing DNR/IDALS budget funds, no details are provided on the amounts that may be made available through such methods, or what existing programs would be sacrificed to cover the nutrient strategy costs.

This is largely due to the strategy's lack of specific details to which costs can be assigned. Nevertheless, it is implied by the very fact that we have a strategy that something will have to be done to initiate work on it. There are identifiable costs in screening and prioritizing watersheds, establishing and building functional watershed groups, and initiating outreach to farmers in particular about the seriousness of this effort that can be accurately estimated and for which responsibilities can be assigned and approaches budgeted.

Likewise, some portion of the funding will be dedicated to cost-share arrangements for farmers. The extent of that funding request will play a substantial role in the public's willingness to accept the strategy, and it will be important to outline that expectation and build support for that investment. The strategy's reliance on voluntary programs means that in the current market it carries with it a corresponding reliance on cost-share funding. The strategy should at a minimum outline those needs for the initial years of the effort, and provide the legislature realistic, accountable estimations of the public commitment required.

The strategy also lacks any serious assessment of realistic private partnership contributions to the process. While conservation groups are mentioned for funding, the reality is that most of them require lands to be under permanent public easement to receive member funds. Very little of Iowa's land meets that qualification, and our lack of favorable tax treatment for permanent easements discourages landowners from this approach. No discussions were held with conservation groups to determine realistic funding contributions or contingencies, nor were they surveyed for information on work they are currently conducting that could be coordinated with the effort. The strategy also does not address in any way contributions from agricultural organizations, who have at their disposal checkoff funds and other sources that can be directed to the issue. The industry groups will play a key role in framing expectations of farmers, and this is an investment that must be made up front. It does not seem unreasonable to expect estimates of their commitment of time and resources to help initiate the strategy.

Additionally, the strategy intends to rely heavily on USDA/EPA funding sources. It must be kept in mind, however, that only a portion of total farm program and 319 funding Iowa receives is earmarked or otherwise available for practices related to nutrient reduction. The strategy only summarizes total past investments in the state, and makes no effort to identify the realistic portion of those funds that are available for practices related to the strategy. Nor does the strategy give attention to measures that might be implemented at the state level to help prioritize practices funded federally but guided by state decisions. And finally, the strategy gives only passing mention to the reality that federal farm conservation programs are targeted for substantial cuts in the 2013 Farm Bill process, and past funding is not a relevant gauge of future funding. If federal funding is intended to be the primary source for the

strategy, it is impossible for the legislature to estimate needed state commitments without some kind of basic assessment of what needs available federal funding will realistically meet.

EWG recommends that as part of the suggested public process for completing the strategy that the budgetary information and estimates that can be reasonable assembled to provide funding guidance be included in the strategy to help better outline expectations for the public, potential partner groups, and the legislature.

The strategy places unrealistic management expectations on the WRCC and WPAC, and minimizes public input into operational plans.

The strategy outlines a process for the Water Resources Coordinating Council and the Watershed Planning Advisory Council to develop operational agreements and implementations plans. Neither the WRCC or the WPAC have staff or substantive budgets at their disposal, nor do they possess any enforcement authority. Experience from attending past meetings suggest that in large part these groups are not even sure themselves what their authority entails. Additionally, these bodies are comprised entirely of volunteers, all of whom are employed in leadership positions with high time demands.

The designation of watersheds requiring priority attention is a scientific assessment. The IDNR should be designated as the organization to develop processes for assessing watersheds, prioritizing them, outlining the basic landscape needs that need to be addressed at the local level, and setting numeric targets and timelines for progress. Once a watershed has been identified and the scientific assessment of needs delivered, IDALS is the agency that is best suited to organize the watershed groups and assist in developing, implementing and monitoring local watershed efforts that meet DNR's targets.

It makes no sense to put responsibility for the delivery of this strategy on volunteer organizations when we have state agencies charged with doing the same work. The WRCC and WPAC can provide a valuable voice in reviewing DNR/IDALS research and approaches, and in ensuring public input, but it is unrealistic to expect them to manage the process.

Similarly, the WRCC and WPAC are hardly representative bodies. They are composed of designated positions representing only the largest governmental and organizational interests. The bodies have no requirement for accepting public input, no obligation to act on public input, and allow industry groups to directly filter what input they do accept. IDALS and DNR are both experienced in managing the many voices that must be addressed to make this strategy a success, and are subject to the state's public comment and response laws. If we expect the public to fund the massive costs this strategy involves, a system that protects the public's interests is essential. This is especially true given that the strategy is already saddled with the public relations burden of having involved agricultural interests in the drafting process long before the public.

EWG recommends that the planning authority outlined in the document be properly redirected to the state agencies that already exist to provide exactly the type of services the strategy suggests are required, and that efforts are made to ensure that the state's public input and response standards apply to all stages

of operational plan development. WRCC and WPAC can still play important advisory and review roles in the process and fulfill their functions under such an arrangement.

The strategy places too much reliance on flawed approaches to voluntary conservation to address agricultural nonpoint source runoff.

EWG firmly believes that a voluntary approach to agricultural conservation is preferred, and is an integral part of any successful long-term solution to nutrient problems. However, a voluntary approach is essentially "self-regulation," and will only achieve results if farmers institute an accompanying land ethic that expects results and universal participation. "Voluntary" does not eliminate the need for the regulatory equivalent of minimum standards of practice, it simply shifts the burden of who will define and enforce those standards. Defining and enforcing a standard is still a required part of any successful voluntary process.

The strategy makes only passing mention of the need for the voluntary process to address this basic requirement, and makes no effort to even suggest measures that could comprise a basic standard of care. It simply notes that IDALS may or may not be able to finally dedicate resources to implement a basic stewardship education campaign that has sat unaddressed for almost a decade. The strategy also fails to acknowledge research conducted by ISU that can shed light on expected farmer participation rates, or even real world statistics of voluntary practice adoption rates versus strategy requirements, and by extension ignores realities that will impact strategy effectiveness. Recent Farm Life Surveys have collected information on conservation, and have noted that less than 50% of farmers intend to install any conservation practices at all for the foreseeable future. Many with land in conservation programs have noted their intent to put it back into production. Overall, less than 30% of Iowa's farmers actively participate in federal conservation programs in any given year, and only a small percentage of those engage in the types of whole-farm applications that the strategy notes will be required.

There is no scenario outlined in the science assessment that could achieve the required reductions that would not include some kind of basic treatment on nearly every acre of land in the state. Several practices – namely cover crops, stream buffers, control of ephemeral gully erosion, filtered drainage, and the return of marginal lands to pasture or outright retirement—have the potential for substantial, immediate impacts on the problem and will work with a high degree of effectiveness on every piece of land to which they are applied. Existing and planned commitments to voluntary programs are an integral part of assessing the potential of such an approach, and the data does not suggest a purely voluntary effort that lacks any form of corresponding "self-regulation" has any chance of being adopted at the required rates. Outlining a publicly recognizable set of practices that establish a baseline minimum effort will be essential to achieving results, and the strategy should set those expectations as one of the core functions of the voluntary approach. There is no feasible way to achieve the reductions required by the strategy without defining and encouraging basic landscape scale changes in land use practices, and the strategy should be a primary vehicle for defining those expectations.

The strategy places too much emphasis for the control of agricultural runoff on future discoveries, requires too little application of the best available existing technology, and places undue emphasis on process over results.

The solution to the state's nutrient problems cannot be dependent on some future undetermined technology that can be implemented at little to no cost and with no impact on production. While finding such a solution is a laudable goal, it is not a realistic one. The strategy all but states a preference for this approach.

A fundamental tenant of our national approach to pollution control is that we do not wait to at until we have the technology we wish we had. Nearly every industry in America outside of agriculture is required to employ some means of the best available technology to address ongoing pollution problems. This includes most all of the entities regulated under the state's point source programs. There is no scenario outlined in the strategy that can achieve the required reductions without conservation practices being installed on every farm in the state. And while no single practice will work equally in every location, and farmers should be allowed to select the most effective practices for their farms, at the end of the day *reductions in nutrients must occur statewide, and they must begin occurring in the short term.* And while the long-term and permanent success of the effort does require the establishment of watershed groups to implement and maintain local efforts, it is unrealistic to base the entire strategy solely on a watershed-by-watershed approach. There are more than 1,700 HUC-12 watersheds in the state of Iowa. At present, it would be a major accomplishment to conduct the proposed in depth assessments of ten of those annually, and to establish basic watershed groups and begin to strategize locally would require another year or two at minimum. Even with an established and sustained commitment, addressing more than 20 watersheds a year would be extremely difficult to do effectively. At that rate, it would take well over 100 years just to initiate the strategy statewide. This is essentially "delay by process".

While the watershed-by-watershed approach is important for long-term success, it provides a minimal immediate effect. Again, the designation of a basic standard of care, to include implementation of appropriate practices from the best existing technologies outlined in the nutrient strategy, could be required and implemented statewide within a decade, and provide immediate and substantial nutrient reductions. While this will not meet the final reduction goals on its own, it will provide results during the period of time required to establish working watershed groups statewide and help to reduce regulatory uncertainties for farmers in the immediate term. Once a watershed group has been established, farmers within that watershed can be allowed to try alternatives and expand or replace approaches within that system to further improve local results and achieve the statewide goals on a permanent basis.

The strategy gives no attention to the issue of conservation permanence.

The strategy is not intended to achieve a reduction in nutrients by a given date, and then to be "complete". The reductions required to meet the goals of this strategy must be permanent to ensure long-term water quality improvements and address CWA requirements.

To achieve the needed results on a permanent basis, permanent land use change will be required, as is clearly noted in the science assessment. Yet the reliance upon federal programs and funding carries with it the reality that many conservation efforts will be transitory in nature, lasting only as long as the government payments. There are many studies that demonstrate that farmers generally terminate conservation practices once government payments cease.

EWG feels that at a bare minimum the strategy must address the need to identify the most problematic marginal lands that are responsible for disproportionate nutrient contributions, and target them for permanent removal from rowcrop production through easement programs, conversion to grazing, or permanent retirement. Failure to address this issue means that the strategy's goals will constantly be moving targets, and ensures a requirement for endless public funding to repeatedly lease lands and replace practices lost to production pressures. The expectation of endless public funding in support of transient solutions is entirely unrealistic.

The strategy does not meet the EPA's basic requirement to address the development of nutrient standards.

A key element of the Stoner memo was the need for states to address numeric nutrient criteria, as required under the Clean Water Act. While we agree that nutrient standards are not the ideal solution to our nutrient problems, they are an essential tool. If farmers cannot make voluntary conservation work to an extent required to achieve the necessary results, nutrient standards are a basic tool available for statewide regulation. If the state must regulate to achieve results, it is implied in that process that the regulations must be uniform and manageable at some scale larger than the individual farm. If farmers want the ability to control the selection of practices, they must step up and do so now, and select practices of both the quality and extent needed to address the problem.

If that does not happen, the failure of the proposed approach does not relieve the state of its responsibility to deliver results. Nutrient criteria will be required as a part of the strategy tool set, and should be complete and available statewide to provide both a floor for achievement and an incentive to act.

The strategy should outline the work required to complete those standards, and a proposed approach for prioritizing and completing the needed work on the state's various waterways within a reasonable timeframe.

The strategy makes little effort to coordinate nutrient reduction efforts with existing state efforts related to nonpoint source pollution.

As noted earlier, the state completed a comprehensive ten-year Nonpoint Source Management Plan last summer. Among the specific actions outlined and scheduled were a wide variety of educational outreach, watershed prioritization, and watershed group establishment goals—all of which would provide direct support to, or even directly serve, the initial requirements of the strategy. In each case, the state agency assigned the goal was consulted on the schedule and needs, they agreed to the

coordinate timeline, annual reporting of progress was agreed to, and the work is ostensibly already underway.

This is but one example of existing state strategies and programs that are not addressed at all in the nutrient strategy. Given the projected financial commitments outlined in the document, it will be absolutely essential to maximize state resources and efforts to achieve the stated goals. It is difficult to understand how we are two years into the process, yet the comprehensive assessment of state efforts already working in support of this effort has only been accounted for in a cursory way.

Similarly, the strategy makes no mention of the potential use of existing state laws, such as the state soil erosion law, as tools available to achieve the strategy's objectives.

We recommend that as part of the suggested public process for completing the strategy, the NPSMP group's work be consulted for the inventories completed as part of that process, and that those inventories and plans, and other state plans and laws that may be appropriate, be addressed and included in the strategic approach to ensure a comprehensive, and fiscally-responsible, approach to the problem.

The strategy relies heavily on potential measurements that require transparency, but says nothing about what will be required to make those measurements transparent.

The strategy implies that nearly all investment in agricultural practices designed to minimize NPS runoff will be expected to come in the form of cost-sharing with taxpayer funds. If taxpayers are to be asked to foot the bill for this approach, transparency in practice installation is required. For purposes of accountability, accurate monitoring, load estimations, and the proper review and refinement of practice reduction estimates, it will be necessary to know the location, extent, installation date and maintenance schedule for those practices credited with nutrient reductions. Most of this data is currently kept from the public under the guise of "business practices". If the strategy is to rely upon practice installation as a measure of success, it must address the ability of the public to engage in independent review of implementation efforts. The strategy makes no mention of data restrictions and related legal requirements that could impair public acceptance of reported results and the ability to monitor progress in practice adoption. Rather, the strategy suggests retaining those limitations, and includes language that implies those exemptions should be expanded.

It is unrealistic in the age of aerial photography and LiDAR to consider the placement of conservation practices as a privacy issue or a secret business practice. Likewise, if the public is expected to pay cost-share on practices, they have a right to know that they are not only installed, but that they are actively maintained and fulfilling the purpose the public payments contracted. Additionally, we cannot conduct accurate scientific research using purely a model-based approach. At some point, we must engage in real-world analysis if we expect real world results.

EWG recommends that the strategy outline the current state of available data on practice placement and coverage, assess the limitations imposed by data restrictions, and outline steps necessary to make publicly available the data required to meet basic accountability purposes.

The strategy is not clear on the intended monitoring practices, and does not adequately prioritize needed monitoring data.

The strategy's brief NPS monitoring discussion and consistent focus on practice-based measurement suggests that the intent of the effort is to measure progress not against actual improvements in water quality, but by equating estimated reductions from installed agricultural practices. The intended approaches to monitoring progress for the strategy must be clarified at the edge of field, HUC-12 and HUC-8 levels.

While EWG could not support an approach to monitoring based entirely on counting practice installations, if practice-based estimations are the intended NPS monitoring approach the strategy should lay out that approach in detail, explain proposed "crediting" systems for practices in each watershed addressed, and detail associated monitoring plans for verifying reduction assumptions and confirming proper installation and continued effectiveness of delivered practices.

In our opinion, the strategy would be better served by outlining specific steps and budgets required to achieve comprehensive statewide monitoring efforts to both assist in determining watershed priorities and assessing local progress. To meet the EPA requirements, simply "trying" is not enough—the effort must show measurable progress by EPA's current standards. While estimates of nutrient reductions based on practice adoption can serve a valuable role as a rolling measurement, at the end of the day the only measurement that truly matters is the nutrient levels in rivers and streams. Acquiring needed baseline data is an obvious first priority, and the costs of implementing the required monitoring network can be estimated with reasonable accuracy. There is no need for this aspect of the work to wait on the development of local groups, and it is an integral step in completing nutrient criteria. It should be initiated immediately, and in order to acquire funding for the work, a projected budget will be essential. That plan should be included in the strategy and subject to public feedback.

The section discussing Iowa's conservation progress is unnecessary, and if retained requires substantial updating.

It is unclear why this section is included in the document. While we have no problem with highlighting progress when it occurs, what farmers have done in the past is simply not at issue. Farmers will have to undertake additional measures regardless of past "progress."

It would be appropriate to include a section on "The Current State of Affairs" that provides useful data on trends, conservation practices in place, and the outside influences that must be considered in developing strategic responses. This type of information, and drawing it to the attention of future planners, would be beneficial.

If this portion of the document remains, it should be updated to reflect current data, as most of the sources used and data points are 4-5 years old and ignore the land conversion that has occurred in Iowa in the past three years. The statistics on erosion are from 2007, and more than 1.5 million acres of land—most of it highly erodible ground—has re-entered production since then. Recent data from the Daily Erosion Project and ISU researchers notes that erosion *at present* is potentially as bad as it has

ever been. While the data on CSP is more current, it should be noted that the contracts mentioned cover less than 1% of Iowa's tilled land, and that substantial growth in farmer participation is required for the program to be successful as a strategic tool. While Iowa's soil loss has indeed been reduced by several hundred thousand tons annually, what is truly relevant is that there are tens of millions of tons of eroding soil yet to address. Even at conservative estimates, Iowa presently loses one pound of soil for every pound of corn grown, and this is clearly an unsustainable trend and a critical part of addressing nutrient issues.

Similarly, the data on wetlands restoration is clearly slanted. The proper measure of wetland restoration is not the raw total, but the quantity restored as a percentage of what was lost. Iowa continues to lose wetland areas to agricultural drainage faster than they are restored, and given the value of on-farm wetlands for nutrient reductions this is a key issue the strategy should address.

The amount of nitrogen applied per bushel of corn yield is equally irrelevant to the strategy, and is not a legitimate measurement in this context. The amount of nitrogen applied per bushel of corn is relevant only to farmer's budgets. The relevant consideration for this strategy is the total amount of nitrogen applied per acre. The nitrogen is applied to the land, and the land is a fixed quantity. Total nitrogen applied sate wide continues to rapidly increase, and over-application is arguably the primary source of the state's nutrient problem. Using the irrelevant measure of yield-per-pound intentionally dilutes the impact of nitrogen on the landscape, and is misleading.

As for the information on CREP, the MRBI and CSP, these programs are more appropriately mentioned in a review of potential funding tools, and the data on participation is relevant only to discussions of what efforts would be required to increase sign-ups to effective levels. These programs can provide useful support to the state's efforts, but sign-up rates and funding seriously limit their potential overall impact. If these programs are to be presented as possible substantive solutions, the strategy needs to plausibly demonstrate a path whereby these programs can realistically impact nearly all row crop acres in the state. Additionally, these programs generally do not have permanent funding baselines, and past funding levels are not an accurate indicator of future funding availability. Inclusion of past performance data here creates the impression that such funding is, indeed, expected to be available. It is also relevant to note that these programs include numerous investments that have nothing to do with actual nutrient-reduction practices, and implying that the complete program investment can be credited toward nutrient reduction is misleading.

EWG recommends the removal of this section from the document, as it is not relevant to the discussion in its current form. In the alternative, it must at the very least be updated to include recent statistics that are relevant for setting current and future priorities.

SCIENCE ASSESSMENT

Commenting on the science assessment portion of the strategy is difficult given the short public comment period and the substantial amount of direct and supporting research to review (some of which is still under peer review). We assume that review of the science, underlying assumptions, and practice

efficiencies will continue long beyond the comment period, and that problems and adjustments will be incorporated into the strategy on a regular basis.

We are confident in the research team that conducted the work for Iowa State University, and given the timelines they were presented, we agree that the work is a valuable contribution. However, limitations placed upon the researchers require attention, as does a process for regularly adjusting not only scientific data, but economic data and practice costs estimates as well.

The strategy fails to adequately address the most recent research from Iowa State, particularly in the area of biologically-based practices, and likewise fails to recommend adequate research updates.

There are numerous instances in the strategy where assumptions are noted that do not incorporate the latest research at Iowa State, with potential heavy impacts on costs and results.

The treatment of streamside buffers is an excellent example. Throughout the strategy, buffers and grass waterways are "discounted" because the types of grasses farmers typically plant in buffers are short-rooted and do not filter waters at a sub-surface level. Recent research at Iowa State has demonstrated with great effect that if those shallow-rooted grasses are replaced by mixture of traditional deep-rooted prairie grasses and forbs, this problem can be solved and buffers can have the same high-capacity filtering effect at both the surface and sub-surface levels. Recognition of this research would have a substantial impact on the cost-benefit analysis of buffers, and they would score significantly higher as a cost-effective practice option.

Similarly, research being conducted at Iowa State on the use of saturated buffers demonstrates that breaking tile lines before they reach the stream and redirecting them through streamside buffers can result in better filtration of nitrates than bioreactors (while simultaneously eliminating the "point source" aspect of tile lines). In effect, this approach could reduce the need for large, expensive filtration wetlands by placing a filtration wetland on every drainage line. Given that this approach could rely on the very buffers outlined above, the combined cost of the practices would also be substantially lower than the bioreactor approach favored in the strategy (with the added benefit of permanence and easy monitoring).

While this research is relatively new, the strategy includes bioreactor research that is of similar age and depth. If the strategy is going to place a heavy emphasis on new practices, it should include all practices under review, if not directly incorporate support and testing for such promising experiments into the strategic process.

Additionally, the strategy proposes to leave decisions on whether research updates are required to the WRRC. This is a not a realistic approach to updating the research. This is especially true in the case of the economic estimates, as they are very tightly linked to the variable price of corn and land. EWG suggests that at the very least, researchers at all Iowa universities be invited to submit annual updates to any aspect of the research in the report, and to recommend additional practices and research to be included in the strategic approach. Likewise, all of the cost estimates should be automatically adjusted

on an annual basis, and the strategy should incorporate means to adapt to changing practice costs and adjust strategic priorities accordingly. Researchers should not require an invitation to help ensure the strategy contains the most up-to-date and accurate information, and their continued submissions and suggestions should be made publicly available as received.

The strategy gives no attention to the public benefits of agricultural nutrient reduction practices in its overall cost estimates or its assignment of costs to specific practices.

The "cost-benefit" analysis employed in the strategy is seriously flawed in that it includes no estimated public benefits associated with various practices. This was done by choice, as the strategy notes. In analyzing benefits, it assesses only the benefits to farmers while ignoring public interests. In no other area of government do we know of a strategic approach that relies upon a cost-only approach. The failure to address the benefit side of the equation, even in estimated form, disproportionately impacts the practice costs.

While difficult to analyze with accuracy, this is true of nearly every numeric value listed in the strategy. There is no unique difficulty in valuing the environmental benefits of practices that warrants the exclusion of such considerations, and agricultural land is not disconnected from the rest of the world and cannot be evaluated in isolation. Conservation practices that provide economic benefits from hunting, fishing and recreation deserve to be credited with those benefits—especially since those public benefits are critical to generating the very funding necessary to implement the strategy.

It is also obvious that part of the reason that this choice was made is that it vastly inflates the cost of land set aside practices with high public value that are not favored by the major agricultural organizations. If the habitat and flood mitigation values of buffers were including in the analysis, their costs would drop substantially. If the costs of reduced yields and insurance subsidy costs for crops in floodplains were accounted for, instead of treating riparian land as if it was equal to the best land in the field, the long-term public benefits of prioritizing that land would likely be very favorable. If small quantities of highly erodible land pushed back into production by overly-favorable crop insurance policy and ethanol demands are causing disproportionate contributions to the problem, their immediate removal from production would be extremely cost effective when compared to the need to implement, manage and monitor conservation practices forever.

And given their effectiveness overall, the "true" valuation of these land-use focused practices would make them a very favorable option versus the substantial implementation costs associated with engineering-heavy practices such as bioreactors.

We recommend that in the first suggested annual update of the strategy's economic assumptions that this approach be introduced to accommodate the full public costs and benefits of practices, and that the strategy's assumptions and priorities should then be updated at that time.

IDALS should address the unexplained change in nitrogen efficiency ratings for some practices, as well as some data inconsistencies in the science assessment, and release the full meeting and discussion history of the strategic and scientific assessment process.

At the Hypoxia Task Force meeting in September 2012, the Powerpoint presented by two of the Iowa State University professors involved in the research, Drs. Matt Helmers and Thomas Isenhart, contained estimated nitrogen reduction potential for a variety of agricultural practices. The Nutrient Reduction Strategy, released two months later, states nitrogen reduction potential by practice for those same practices that are vastly different. The difference has a substantial effect on the efficacy analysis and scenarios presented in the strategy. The change is particularly dramatic for perennial crops. The earlier document states perennial crops could remove 85 percent of nitrogen but the draft Strategy document states it could remove only18 percent.

Practice	Draft Nutrient Reduction Strategy	Sept 2012 Presentation
Cover crop	28%	31%
Wetlands	22%	52%
Bioreactors	18%	43%
Perennial crops	18%	85%
Fall N to Spring	0.1%	6%

There is no information in the strategy to shed light on why such changes were made. As the discussions that occurred prior to the strategy's public release—including those related to both industry group input and the framing of the research—have not been made public, there is no viable way to determine this information without further documentary clarification. Similarly, without access to that information, it is impossible to conduct a full review of the science and identify potential further discrepancies.

Additional inconsistencies occur in the discussions surrounding the Maximum Return to Nitrogen. At the outset, the strategy specifically notes that in practice most Iowa farmers exceed the MRTN by as much as 25% over the amounts recommended by ISU scientists. Throughout the strategy, however, footnotes point out that application rates are often assumed to be at appropriate MRTN recommendations. It seems odd for the strategy to note a specific problem and then selectively ignore it as it progresses.

There are also inconsistencies in the estimation of establishment costs for practices noted in the strategy. The NRCS maintains extensive documentation on the accepted costs for the establishment of practices, adjusted for local costs. There are practice establishment costs noted throughout the strategy that appear to have been even further adapted to local economics, at substantial increase in cost, but the justifications for such variations are not discussed. Likewise, there are practices noted in the strategy with no establishment costs noted, but for which costs are clearly available from existing federal sources.

EWG recommends that IDALS collect and make available all documents and notes related to the preliminary discussions on the strategy, and the background information from the research process, to allow the public the opportunity to clarify such details and conduct proper review of the assessment process.

While the use of "corn value" as a measurement for land value can be acceptable as a starting point, the strategy must address the inherent deficiencies in that valuation and work to adopt a more realistic model based on actual land use expectations in the future, while also acknowledging the need to devote state resources to promoting necessary cropping changes.

Corn is the rowcrop most responsible for our nutrient problems, and is planted widely across the state. However, it is by no means planted everywhere, and soybeans in particular are planted extensively each year. Soybeans have a substantially lower nutrient impacts where grown. Small grains, when grown, can provide even less impact than soybeans. Valuing all land as if corn were grown on it, which is essentially the approach adopted by the strategy, not only provides an inaccurate basis for assessing costs and benefits, it fails to recognize the substantial benefits that could be gained by simply encouraging farmers to grow other crops. This approach would also require almost no investment from taxpayers and would help to meet the need for permanent land conversion in targeted instances.

Over time, the strategy must correct this intentional shortcoming, continue the research necessary to paint an accurate and complete picture of nutrient impacts based on actual land use, and to properly credit favorable land use choices. Likewise, encouraging cropping conversions is a responsibility that would clearly fall on IDALS, and again involves identifiable staffing and cost requirements that can at minimum be outlined for a five-year period. The long-term success of the effort will require more comprehensive and accurate valuations of land use impacts, and as concerted effort to address current shortcomings in the data or research.

ENVIRONMENTAL LAW & POLICY CENTER
Protecting the Midwest's Environment and Natural Heritage

January 18, 2013

Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, IA 50011-1010

Bill Northey
Secretary of Agriculture
502 E. 9th St.
Des Moines, IA 50319

Chuck Gipp
Director, Iowa Department of Natural Resources
502 E. 9th St.
Des Moines, IA 50319

Re: ELPC Comments on Iowa Nutrient Reduction Strategy

Dear Secretary Northey and Director Gipp,

On behalf of the Environmental Law & Policy Center (ELPC), a non-profit public interest corporation with Iowa members and an office in Des Moines, we write to offer comments regarding the Iowa Nutrient Reduction Strategy: A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico (hereafter "Nutrient Strategy").

The Nutrient Strategy discusses some useful steps already being taken and contains some positive proposals. The agricultural community is currently engaged in the issue of nutrient runoff, which is critical to farmers because of the financial loss that results from nutrient runoff. The efforts of a team of scientists at Iowa State University demonstrate that it is possible to implement a combination of practices to meet aggressive water quality goals. The science assessment has also provided a roadmap for what additional information and research needs to be collected and completed.

Despite these positive steps, the Nutrient Strategy provides surprisingly little policy detail, and very little in terms of new approaches or programmatic ideas for a strategy that took two years to develop. As we detail below, the final Nutrient Strategy should:

- **Discuss how nutrient pollution has consequences for all Iowans;**

- **Provide a detailed plan for developing and implementing numeric nutrient criteria for water bodies in Iowa;**
- **Implement more stringent technology-based effluent limits in priority watersheds;**
- **Comply with the Clean Water Act and Iowa law by including effluent limits based on narrative and dissolved oxygen standards in NPDES permits;**
- **Provide detailed action steps, timelines for implementing actions, administrators responsible for implementing actions, and opportunities for public input for all aspects of the strategy;**
- **Account for the multiple benefits of best management practices when evaluating and implementing those practices; and**
- **Incorporate farm stewardship plans into the nonpoint source strategy.**

Our recommendations address the shortcomings in the current draft of the Nutrient Strategy. The Nutrient Strategy takes an entirely voluntary approach to agricultural pollution. An approach that relies too heavily on education and voluntary efforts to address agricultural nutrient pollution and provides no transparency, no timetable, no accountability and no funding is inappropriate given the magnitude of water quality problems in Iowa. An effective strategy would require the participation of the vast majority of farmers in the state. However, a purely voluntary approach to agricultural pollution will not reach a large number of farmers, a sizeable portion of the landscape and the significant water quality problems that have consequences for us all. The limitations of a voluntary approach are only compounded by the fact that the Nutrient Strategy requests nominal resources to address water quality while the baseline funding for water quality programs in Iowa is less than it was a decade ago.[1] More disturbingly, the Nutrient Strategy ignores the requirements of the Clean Water Act and fails to outline a long-term plan to bring Iowa into compliance with the law. This fails to protect Iowans from the very real consequences of nutrient pollution including risks to public health and limiting our ability to enjoy our lakes, rivers and streams.

We hope the response to our comments and recommendations addresses the very serious shortcoming in the first draft of the Nutrient Strategy. Nutrient pollution is the result of wasted resources and represents a serious problem that requires the concerted efforts of all Iowans to make progress. We are ready and willing to work with anyone interested in making progress and developing real workable solutions.

I. Nutrient Pollution is an Iowa Problem with Iowa Consequences and the Nutrient Strategy Must Emphasize the Iowa Consequences if it is to Convince Stakeholders and the Public to Act.

One of the most basic parts of any strategy is to define the problem. It is the first opportunity to set the stage, provide purpose and engage stakeholders. The nutrient strategy focuses the problem almost exclusively on Gulf Hypoxia.[2] ELPC agrees that Gulf Hypoxia is a very serious problem, but that is only a part of the reason that we care about nutrient pollution in

[1] Iowa Policy Project, "Drops in the Bucket: The Erosion of Iowa Water Quality Funding," at 4-5 (March 2012).

[2] In the public presentations of the plan that we have seen, DNR staff do at least mention effects of nutrient pollution beyond Gulf Hypoxia. The strategy document itself has very little discussion of nutrient pollution consequences beyond Gulf Hypoxia, and in public presentations, IDALS staff discuss the strategy only in terms of Gulf Hypoxia consequences.

Iowa. Excessive nutrient pollution has an impact on the health of Iowans, the way that Iowans can enjoy our lakes, rivers and streams for recreation, and our economic health.

Nutrient pollution is linked to multiple public health problems that are familiar to Iowans. Nutrient pollution makes our drinking water sources less safe with high levels of nitrates, which can cause blue baby syndrome. When nutrient polluted water is treated, disinfection byproducts are formed and can be found in drinking water leading to odor and taste problems and more severe health consequences. Nutrient pollution chokes our rivers and lakes with algal blooms[3] and leads to fish kills[4] and declining fish populations in water bodies throughout the state. In 2008, high levels of blue green algae, caused by pollution over 100 miles upstream, forced the Des Moines Water Works to temporarily switch the source of its drinking water from the Raccoon River to the Des Moines River.[5] In addition, swimmers and others out on our waters are exposed to toxic microbes such as cyanobacteria leading to sickness and posing even greater risk to children and pets.[6]

Nutrient pollution has a real cost too. When water is polluted, it results in increased costs for drinking water treatment. For example, in the early 1990s, the Des Moines Water Works spent about $4 million to build the world's largest nitrate removal system. The Des Moines Water Works tries to minimize use of its nitrate removal system, but that requires alternative treatment methods, which also have a cost. This cost is not unique to the Des Moines area and it is spread out among all of us and quietly included in our utility bills. Impairments to water quality also have other economic impacts. Soil erosion doesn't simply carry nutrients into the watershed; it carries a farm's most valuable resource away.[7] Property values around polluted waters are reduced. Small businesses that rely on boating, fishing, open beaches and other recreation and tourism on our lakes, rivers and streams suffer as a result of excessive nutrient pollution.

The purpose of a Nutrient Strategy should not be just to reduce Gulf Hypoxia. The purpose of the Nutrient Strategy should be to address the very real consequences of water pollution in Iowa. Explaining this purpose is particularly important if the policy approach in the Nutrient Strategy is voluntary for the agricultural community. Iowa farmers care about their land because it is their primary asset, and they care about their community because it is where they raise their families. The case for action is much more compelling to farmers when we talk with them about their neighbors not having clean and safe drinking water; when we talk to them about their friend not being able to take his son to fish in the same stream that his dad took him to fish a generation earlier because fish no longer live in that stream; when we talk to them about the lake they have memories of boating on over holiday weekends and lazy summer afternoons being clogged with algae. This case has not been made to Iowa farmers in recent years, and as a result, today, fewer farmers think soil erosion and water quality are important issues compared to what they thought 30 years ago.[8] If the Nutrient Strategy does not educate the public about the

---

[3] *See* Picture of algae blooms in the Raccoon River in Dallas County attached as Exhibit A and picture of algae blooms in Big Creek Lake in Polk County attached as Exhibit B.
[4] *See* Picture of a fish kill courtesy of Iowa Department of Natural Resources attached as Exhibit C.
[5] *See* Raccoon River Connects Urban, Rural Water Quality Problems *available at* www.InIowaWater.org.
[6] *See* Picture of Cyanobacteria in Black Hawk Lake in Sac County attached as Exhibit D.
[7] *See* Picture of Soil Erosion by USDA NRCS attached as Exhibit E.
[8] Iowa Farm and Rural Life Poll, 2012 Summary Report, at 5 (2012) (reporting that 63% of farmers thought soil erosion was an important or very important issue in 2012 when 88% thought it was an important or very important issue in 1982, and 56% of farmers thought water quality was an important or very important issue in 2012 when 88% thought it was an important or very important issue in 1982).

full scope and consequences of Iowa's nutrient pollution problem, it cannot effectively motivate Iowans to act. A serious strategy must talk about how nutrient pollution is an Iowa problem with consequences for every Iowan.

II. The Nutrient Strategy Should Comply with the Requirements of the Clean Water Act and the Guidance of the Stoner Memo and Include a Detailed Plan for Developing Numeric Nutrient Criteria.

The Clean Water Act's objective is "to restore and maintain the chemical, physical and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To accomplish this objective, the Clean Water Act envisioned a set of policies and programs that addressed both point and nonpoint sources of pollution. *See* 33 U.S.C. § 1251(a)(7) ("it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this chapter to be met through the control of both point and nonpoint sources of pollution.").

Section 303 of the Clean Water Act governs adoption of standards to protect water quality. 33 U.S.C. § 1313. The Act requires water quality standards to include designated uses of the waters such as recreational, swimming and aquatic life and how clean the water needs to be to support those uses. 33 U.S.C. § 1313(c)(2)(A) ("Such…water quality standard shall consist of the designated uses of the… waters… and the water quality criteria for such waters based upon such uses."). These water quality standards shall "protect the public health or welfare, enhance the quality of water and serve the purposes this chapter" which includes the goal of achieving "fishable and swimmable" waters wherever it is attainable. 33 U.S.C. § 1313(c)(2)(A) and 33 U.S.C. § 1251(a)(2). The Clean Water Act gives the states authority to develop these water quality standards in the first instance, but in the absence of adequate state action, the EPA has the responsibility to develop necessary water quality standards. 33 U.S.C. § 1313(c)(4).

EPA has made clear for decades that nutrient pollution degrading water quality throughout the United States is a critical national problem. EPA science and numerous other reports demonstrated that nutrient pollution results in the increasing prevalence of harmful algal blooms, reduced spawning grounds and nursery habitats, fish kills and oxygen-starved hypoxic or dead zones. Nutrient pollution endangers public health due to impaired surface and groundwater drinking water sources from high levels of nitrates, formation of disinfection byproducts in drinking water, and increased exposure of swimmers to toxic microbes such as cyanobacteria. Nutrient pollution also leads to economic costs from increased drinking water treatment costs to reduced property values for polluted stream and lakefront areas to lost revenue from recreational fishing, boating and other tourism-related businesses. EPA has long held that numeric nutrient criteria are necessary to address nutrient pollution problems and that it will promulgate such standards if states fail to act.[9]

Most recently, Nancy Stoner, the acting Assistant Administrator for Water at U.S. EPA, issued a memo on March 16, 2011 (also known as the Stoner Memo) to provide a framework for working with the states to address nutrient pollution.[10] The Nutrient Strategy claims to follow the framework provided by the EPA in the Stoner memo. The Stoner Memo lays out several "key

---

[9] EPA National Strategy for the Development of Regional Nutrient Criteria, 63 Fed. Reg. 34648, at iv-v (1998).

[10] Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions (March 16, 2011) *available at* http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/memo_nitrogen_framework.pdf.

principles" and "minimum building blocks" necessary for effective programs to manage nitrogen and phosphorus pollution. One of the "minimum building blocks" is a "work plan and schedule for numeric criteria development." As the memo notes, "[i]t has long been EPA's position that numeric nutrient criteria targeted at different categories of water bodies and informed by scientific understanding of the relationship between nutrient loadings and water quality impairment are ultimately necessary for effective state programs." Stoner Memo at 2. The Stoner Memo only allows states additional time to develop numeric criteria if the state "is making meaningful near-term reductions in nutrient loadings." Stoner Memo at 3 ("[A] State's criteria development schedule can be a flexible one provided the state is making meaningful near-term reductions in nutrient loadings to state waters while numeric criteria are being developed.").

While the format of the Iowa Nutrient Reduction Strategy follows the framework from the Stoner Memo, the Nutrient Strategy does not even attempt to comply with the spirit or substance of the Stoner Memo in key areas. The development of nutrient criteria is a critical part of the Stoner Memo. The Memo recommends that a state "[e]stablish a work plan and phased schedule for N and P criteria development for classes of waters." Stoner Memo, Framework Attachment at 2. The Stoner Memo notes that a work plan "should contain interim milestones including but not limited to data collection, data analysis, criteria proposal, and criteria adoption." *Id.* The Memo concludes that a reasonable timetable for developing numeric criteria for one class of waters would be within 3-5 years. *Id.* Indeed, many water quality advocates have expressed concern that even this timeline is not urgent enough to address the serious problems of nutrient pollution. Litigation is currently pending in federal court to address a petition for rulemaking for the EPA to develop numeric criteria.

Portions of the Nutrient Strategy regarding numeric criteria are seriously misleading. The Nutrient Strategy falsely implies that, in the absence of numeric standards, point sources need not have effluent limits on pollutants and that establishment of numeric standards would necessarily require extremely costly numeric limits on point sources. As will be discussed further below, IDNR cannot legally delay putting necessary effluent limits on point sources until numeric criteria are developed. The fact that IDNR is not doing this is not because it is legally entitled to wait for numeric phosphorus and nitrogen standards but because IDNR is not properly implementing existing law. Conversely, it is not true that establishing numeric phosphorus and nitrogen standards would impose unreasonable costs on Iowa dischargers. When the cost of compliance for numeric nutrient criteria is weighed against the negative public health risks, negative environmental impacts, and the economic harm to tourism and property values, the consequences and costs of nutrient pollution are too high to do nothing. Furthermore, federal law contains provisions for compliance schedules and variances for circumstances where controls would impose a real financial hardship for specific dischargers. In short, it is not true that Iowa may do nothing on effluent limits until numeric standards come, and it is also untrue that numeric standards will cause unreasonable costs.

The Stoner Memo is not a free pass to avoid the requirements of the Clean Water Act to develop numeric nutrient criteria, yet the Iowa Nutrient Strategy ignored the entirety of the Stoner Memo's guidance for developing nutrient criteria. The Nutrient Strategy does not include any numeric criteria or any plan to develop numeric criteria for any category of waters. The strategy does not even include a timeline for data collection or data analysis.[11] The strategy

[11] The Nutrient Strategy sheepishly provided a basis for excluding numeric criteria as the "debate on how to establish the appropriate criteria." Iowa Nutrient Reduction Strategy at 6-7, 22. The Stoner Memo addressed the methodological debate noting that "We believe that a substantial body of scientific data, augmented by state-specific

suggests Iowa will pursue an alternative approach, but there is no timeline of a plan for how that will happen either. In comments on the strategy, EPA noted that the strategy "does not reflect EPA's current thinking about numeric criteria development and implementation."[12] The Nutrient Strategy should be revised to include a work plan for developing and implementing numeric nutrient criteria – a failure to do so delays Iowa's compliance with the Clean Water Act, forces Iowans to unnecessarily continue to suffer the consequences of nutrient pollution, and risks EPA action.

III. The Nutrient Strategy Point Source Plan Should Be Integrated with the Prioritization Efforts of the Strategy and Should Comply with the Clean Water Act and Iowa Law by Including Effluent Limits Based on Narrative and Dissolved Oxygen Standards in NPDES Permits.

The point source section of the Nutrient Strategy requires major wastewater treatment facilities to evaluate the feasibility of biological nutrient removal and to develop a schedule for biological nutrient removal installation as part of the issuance of NPDES permit renewals. Technology-based nutrient limits will also be required for industrial facilities on a case-by-case basis using a feasibility analysis. The plan states that in all cases the effluent limits will be no more stringent that 10 mg/L TN and 1 mg/L TP. It is a positive step that IDNR will implement technology based effluent limits as part of the NPDES program. However, more could and should be done to integrate this approach with other parts of the Nutrient Strategy and to comply with the requirements of the Clean Water Act and Iowa law.

The Nutrient Strategy technology-based limits should be strengthened. The Nutrient Strategy should not arbitrarily limit the results of the proposed economic and technological evaluation by stating that the technology based limits will not be more stringent than 10 mg/l TN and 1 mg/l TP. If the evaluation determines that more stringent effluent limits are economically and technically feasible, those limits should be used as the technologically based limits. More stringent technology based effluent limits than 10 mg/l TN and 1 mg/l TP are already being implemented in other parts of the country and technology based effluent limits of 3 mg/L TN and 0.3 mg/L TP were used by the EPA Science Advisory Committee during the G.W. Bush Administration as an example of the most effective actions for industrial and municipal sources.[13]

We are also concerned that permit limits will be expressed as an annual average in permits. This method of measurement would allow effluent limits to exceed permit limits by a significant amount for stretches of the year and/or for significant periods of the year. Monthly and short-term permit limits, based upon annual limits, are required in NPDES permits.

More stringent effluent limits are possible. Other state strategies are already starting to implement it. Tennessee has started to share its Nutrient Reduction Strategy, and its approach to Wastewater Treatment Plant permits is an example of how Iowa's plan could be improved to

---

water quality information, can be brought to bear to develop such criteria in a technically sound and cost-effective manner." Iowa DNR and IDALS have the ability to start a process that collects the necessary data to address any methodological concerns. Debate about how to establish the appropriate numeric criteria is no excuse for ignoring the law.

[12] EPA letter to Chuck Gipp and Bill Northey (January 9, 2013) *available at http://www.epa.gov/region7/water/pdf/comment_letter_iowa_nutrient_reduction_strategy.pdf*.

[13] EPA Science Advisory Board, Hypoxia in the Northern Gulf of Mexico, at 198-99 (2007).

address watershed prioritization and/or facilities that contribute more significantly to nutrient pollution.[14] Tennessee starts by evaluating a wastewater treatment plant's contribution to total nitrogen and total phosphorous in a watershed. It categorizes such a contribution as low, medium or high and sets permit limits based on the categorization. The Total Nitrogen limits by category are low – cap at present level; medium 8 mg/l and high 5 mg/l. The Total Phosphorous limits by category are low – cap at present level; medium 1 mg/l and high 0.3 mg/l. This approach targets facilities that contribute a high or medium amount to the nutrient load of a watershed and requires them to meet more stringent technology based limits.

Similarly, point sources that cause or contribute to significant problems that result from nutrient pollution should also be subjected to more stringent limits in their permits. This is currently required by the Clean Water Act and Iowa law. Under 40 CFR § 122.44(d), NPDES permits may not be issued that will allow discharges which cause or contribute to violations of state numeric standards or narrative standards. While Iowa has not developed numeric standards, Iowa has a narrative standard that requires that Iowa waters be free from pollutants that "produce undesirable or nuisance aquatic life." 567 Iowa Administrative Code § 61.3(2)(e). As part of the NPDES permitting process, IDNR should look at Iowa point sources and make sure that it includes effluent limits in permits that are based on these narrative standards to ensure that point sources are not permitted to discharge phosphorus or nitrogen that would cause or contribute to a violation of this standard by promoting algal or cyano-bacteria growth. In addition, Iowa has numeric dissolved oxygen standards that generally do not allow dissolved oxygen to fall below 5 mg/L. 567 Iowa Administrative Code § 61.3(3)(b)(1). Thus, under existing Iowa law, NPDES permits should have limits on discharges of P where the discharges might contribute to violations of the dissolved oxygen standards.

The point source strategy acknowledged that permits must comply with narrative standards, but then did not include discussion of how IDNR will incorporate effluent limits based on these narrative standards into NPDES permits. The plan further takes the position that if biological nutrient removal technology is installed, the permittee will not have to meet more restrictive limits than technology based effluent limits of 10 mg/l TN and 1 mg/l TP for ten years. This is contrary to the Clean Water Act. The Nutrient Strategy must require a strategy for NPDES permits to meet narrative standards and limits on P to meet dissolved oxygen standards and not just biological nutrient removal technology. This should apply across all point sources, but it is particularly important in priority watersheds and with facilities that cause or contribute to nutrient pollution problems.

Iowa Code § 455B.173(3)(c) exempts a publicly-owned treatment facility that meets certain effluent limits in a permit from being subject to more stringent requirements for 10 years. Applying a ten year limit on reevaluating effluent limits in a NPDES permit is inconsistent with the Clean Water Act. Furthermore, such limited reevaluation makes it difficult if not impossible to respond to watershed prioritization that is to be reevaluated every five years according to the Nutrient Strategy. IDNR should use a five year time table to reevaluate the appropriateness of effluent limits in NPDES permits as the Clean Water Act requires.

The Nutrient Strategy suggests that it will prioritize watersheds in Iowa, but the point source approach does not address watershed prioritization. A point source strategy that prioritizes watersheds should make a more concerted effort and apply more stringent limits with point source facilities in the priority watersheds rather than apply the same minimum technology

[14] *See* Tennessee's Statewide Nutrient Load Reduction Strategy Powerpoint (April 10, 2012) *available at* http://www.tetratech-ffx.com/tfmeeting/spring2012_pub/downloads/Qualls.pdf.

based standards to all point sources. Similarly, the strategy should address minor treatment facilities in that watershed. The point source plan should be revised to address priority watersheds, and the point source plan should retain the ability to respond to the reevaluation of priority watersheds scheduled to occur every five years under the strategy.

If Iowa's approach is to be a true collaboration between point and non-point sources that targets priority watersheds, Iowa's point sources that contribute significantly to the nutrient load in priority watersheds should be expected to do more. The Iowa Nutrient Strategy Point Source Plan should be revised to strengthen the technology based effluent limits, to add specific actions to address point sources in priority watersheds, and to clarify how NPDES permits will include narrative criteria and dissolved oxygen standards and be renewed every five years consistent with Clean Water Act requirements.

IV. The Nutrient Strategy Should Provide Detailed Action Steps, Timelines for Meeting Action Items, Responsible Administrators and Opportunities for Public Input.

Most of the policy section of the Nutrient Strategy lacks the critical details that make a document a strategic plan as opposed to a more general statement of principles or goals. A strategy with real accountability would have publicly disclosed concrete steps to take with deadlines for when those steps would be completed. Without deadlines accompanying goals, there is no way to hold IDNR and IDALS accountable. Without assignment of responsibility to specific administrators or divisions, there is no one to hold directly accountable for a failure to meet deadlines and goals. Without addressing the resources that will be needed to implement the strategy, there is no way for decisionmakers and legislative leaders to provide the resources necessary for this plan to be successful. A revised strategy should be drafted so that the public can later determine if it has been implemented, whether it is working and if it has not been implemented or is not working why that is the case. That means the Nutrient Strategy should have benchmarks to monitor, deadlines to meet, administrators to hold accountable, and the funding necessary to support these efforts.

A. The Agricultural Portion of the Nutrient Strategy Lacks Critical Details Related to Benchmarks, Deadlines, Administrative Responsibility and Funding Necessary to Implement these Efforts.

The agricultural area of the Nutrient Strategy is the most difficult to comment on in part because it does not include sufficient detail for us to determine what the strategy actually is. Much of this section states laudable goals without providing a roadmap of how those goals will be achieved, when those goals should be achieved, who is responsible for achieving the goal, or the resources required to achieve those goals. In some instances the strategy merely repackages ongoing water quality efforts by federal and state agencies as something new for this plan (see Small Watershed Pilot Projects or the 2007 recommendation of the Iowa Watershed Quality Planning Task Force for education and marketing). In other instances, the strategy makes a general proposal to which no one would object to but then provides no plan for realizing the proposal. (see Combination of In-Field and Off-field Practices and Achieve Market-Driven Solutions).

An effective strategy must focus on getting scientifically proven practices implemented at the field level. Ultimately, the strategy must translate into date specific targets for when new practices for nitrogen and phosphorous pollution reduction will be implemented and in place at the farm level. The plan should also include how and when those new practices will be measured to determine if they are working.

It is also critical that the agricultural piece of the strategy determine and provide the resources that will be needed for successful implementation of practices that will reduce nitrogen and phosphorous pollution from agricultural sources. Best management practices and new nutrient reduction strategies will need to be implemented across the landscape in order to prevent consequences to public health and our rivers, streams and lakes. The agricultural portion of the strategy states that it "will rely on existing funding sources, or as applicable, reallocation of existing funding sources." The Conservation Reserve Enhancement Program, Conservation Reserve Program, Watershed Protection Fund, Soil Conservation Cost Share, and Resource Enhancement and Protection all received less funding in Fiscal Year 2012 than in Fiscal Year 2008.[15] Most received less funding in FY 2012 than in FY 2002, and the decrease in funding is even greater when adjusted for inflation. The Nutrient Strategy should identify and request the resources necessary to implement a plan designed to prioritize watersheds and increase farmer participation in nutrient reduction practices.

A purely voluntary approach that focuses on education and outreach but does not ask for increased resources will not achieve significant reductions in nutrient pollution. In fact, even if significant resources for cost share are available in addition to the education and outreach strategies of the Nutrient Strategy, the strategy will still not reach a significant number of Iowa farmers and farms. In the 2011 Iowa Farm and Rural Life Poll conducted by Iowa State University Extension and Outreach, 30 percent of farmers responded that they would not implement more conservation practices even if more funding and technical assistance were available.[16] Forty percent of farmers were uncertain that additional technical assistance and funding would get them to implement more conservation practices. Iowa farmers tell us a voluntary approach with no additional funding will not work on 63,000 Iowa farms. Those same farmers tell us that even with the Nutrient Strategy approach of strengthened outreach and increased education, public awareness and recognition combined with increased funding that is not currently requested, this strategy will not work for 30,000 Iowa farms (those who would do nothing even with additional funding and technical assistance). A Nutrient Strategy that does not reach a significant portion of Iowa farmers and the Iowa landscape cannot achieve significant nutrient reductions. The Nutrient Strategy should be revised to address this gap.

The Nutrient Strategy relies too heavily on education, and a purely voluntary approach to agricultural nutrient pollution with no transparency, no timetable, no accountability and no funding will not change the very real nutrient pollution problem facing Iowans. This same approach has been utilized to varying degrees for the last 70 years but has not been enough to get the job done. The Nutrient Strategy presents no reason to expect a different outcome continuing the same voluntary approach now. The Nutrient Strategy should be revised to provide critical details for existing action items, and it should be expanded to address gaps that fail to reach up to 63,000 Iowa farms.

---

[15] Iowa Policy Project, "Drops in the Bucket: The Erosion of Iowa Water Quality Funding," at 4-5 (March 2012).
[16] Iowa Farm and Rural Life Poll *available at* https://store.extension.iastate.edu/ItemDetail.aspx?ProductID=13717.

B. Prioritization of Watersheds Should be Done in a Transparent Process Based on Scientific Data that is Made Available to the Public.

It is a positive step that the strategy addresses watershed prioritization. However, more detail is essential to understand the process that is to be used and the data that will form the basis for prioritization. If there is data that is important to effective watershed prioritization that is currently unavailable, it should be identified as well as a plan to fill in the data gap. It is also important to provide specific benchmarks for when pieces of the prioritization will be completed. The strategy indicates that the prioritization will be completed within the year by the Water Resources Coordinating Council (WRCC) and that the prioritization is already underway. There has been no watershed prioritization discussion in the public meetings of the WRCC. WRCC members have expressed concern about the development of the strategy and their role in the strategy without their review or comment. If the WRCC is to play a significant part in development and implementation of the strategy going forward, the process for how the WRCC will complete that work should be transparent and offer opportunity for public and stakeholder input. The process should not consist of select WRCC members developing prioritization behind closed doors and presenting it to the WRCC for ratification later.

C. Watershed Goals Should be Based on N and P Levels.

The Stoner Memo recommends that state strategies "establish numeric goals for loading reductions for targeted/priority sub-watershed." Instead of setting loading reduction goals the Iowa Nutrient Strategy vaguely states, "WRCC will set measures of success and relate these to watershed improvement based upon a set of mutually agreed to indicators." An important part of a comprehensive nutrient reduction strategy in Iowa is to develop good scientific information about the baseline loads of N and P and then how to reduce those N and P loads. The scientific assessment has good information about strategies that would allow for the development of N and P load reduction goals. The baseline N and P levels still need to be developed. To focus limited resources on developing other indicators when this important scientific baseline work has yet to be completed does not effectively prioritize scientific resources. The Nutrient Strategy does not provide any reason why watershed goals should not be based on N and P levels, and we cannot think of a good reason to stray from the Stoner Memo guidance to develop numeric goals for loading reductions by watershed.

D. Credit Trading Should Be Developed Transparently and Include Measures to Make Any Trading Verifiable, Scientifically Based and Enforceable.

Effectively designed nutrient trading programs might be an option to consider for meeting nutrient reduction goals in a cost-effective way. The Nutrient Strategy includes credit trading tasking IDNR, IDALS and the WRCC with developing an environmental credit trading program. At the December 6th, WRCC meeting IDALS indicated that a "business interest" has proposed a trading project, but IDALS refused to disclose any details of the project or interest that had proposed the project. There are no details to evaluate the concept of credit trading included in the strategy, but we will provide comments that will highlight key issues and challenges that must be addressed for the creation of an effective nutrient trading program in Iowa.

EPA has outlined keys to a successful trading program.[17] The trading program should be transparent keeping the public informed throughout the process and involving stakeholders in the design of the trading program.[18] The program should demonstrate measured reductions in nutrients and verifying the installation and maintenance of the offsetting practices. There should be accountability including trade tracking mechanisms and review of both program process and results. The program should be defensible based on sound science and have protocols for certifying credits. The scientific assessment completed thus far in developing the strategy can be built upon to develop scientifically based trading ratios. Finally, the trading program must be enforceable and establish responsibility for meeting or exceeding water quality standards that are incorporated in NPDES permits.[19]

An effective trading program must be enforceable and that means an effective "cap" on nutrients. There are several different ways to develop the cap. We think that the best way to develop the cap is through Clean Water Act required statewide numeric nutrient criteria. Other ways to develop a cap would be through the implementation of nitrogen and phosphorous effluent limits through TMDLs, or implementation of effluent limits based on narrative criteria.

There also must be a baseline for farmer participants in trading programs. We think that the farm stewardship proposal that we discuss in greater detail below can provide such a baseline. If farmers have implemented the baseline BMPs identified in their farm stewardship plan, they will become eligible for cost share for additional BMPs identified in the farm stewardship plan that would be eligible for payment as credits in a trading program. Without a verifiable baseline, a trading program will reward farmers that have done nothing (they'll have more potential "credits" to trade) and penalize the good farmers that have already installed BMPs (harder for them to generate credits). Even worse, a trading program with no baseline could incentivize responsible farmers to remove or stop BMPs in order to do what they were already doing and receive payment for it.

ELPC has carefully monitored efforts to develop nutrient trading in the Midwest and elsewhere and has participated in efforts to improve trading programs proposals. In so doing, we have developed expertise on trading programs and would be eager to apply that expertise to help develop trading programs that would be effective in Iowa.

E. The Nutrient Strategy Should Include Specific Steps and Action Items Necessary for Iowa to Comply with the Clean Water Act in Administering its Animal Feeding Operations Program.

The Nutrient Strategy has a section on addressing Animal Feeding Operations but fails to mention the EPA's recent findings concerning IDNR's failure to comply with the Clean Water in implementing its NPDES CAFO program or the subsequently agreed to work plan between IDNR and EPA to bring Iowa's NPDES CAFO program into compliance with the Clean Water Act. The policies and practices that IDNR uses to enforce the Clean Water Act must serve as a

[17] EPA, Water Quality Trading Toolkit for Permit Writers (Updated June 2009) available at http://www.epa.gov/npdes/pubs/wqtradingtoolkit_fundamentals.pdf.

[18] The strategy implementation is not off to a good start based on this first measure. IDALS was eager to tout a proposal by a business interest for a water quality offset pilot project at the WRCC meeting on December 6, but was unwilling to share details or provide a way for the public to be involved in design and development of the project.

[19] If the inclusion of the trading program under Stoner Framework Item 3: Ensure Effectiveness of Point Source Permits is an acknowledgement of the need to make a trading program enforceable by incorporating standards into NPDES permits, we are encouraged but more detail is necessary to confirm this.

deterrent to bad actors and ensure that those bad acts do not become a cheaper way of doing business than compliance with the law. We highlighted our concerns and recommendations in a joint letter to EPA with the Iowa Environmental Council on October 31, 2012. We will not repeat those concerns and recommendations here, but we will note that the Nutrient Strategy should include steps that IDNR will take to ensure that the Animal Feeding Operation program meets the Clean Water Act requirements.

V. The Scientific Assessment is a Step in the Right Direction but More Scientific Research is Needed and the Strategy Must Apply the Science to Policy Solutions.

One consequence of the short time for public comment is that we have had a limited ability to thoroughly review the scientific assessment. Our general impression is that the scientific work done as part of the development of the Nutrient Strategy is important work. It identifies how a combination of practices can achieve significant reductions in nutrient pollution, and it will inform future efforts including additional scientific research. However, the science assessment was not applied in any meaningful way in the policy portion of the strategy. It is important to know that we can achieve significant reductions in nutrient pollution, but it is equally important that the science be used to demonstrate how we will achieve those reductions in the context of policy changes. Furthermore, if the scientific assessment included a baseline assumption that baseline should be the reality on the ground and steps should be taken to make sure that is the case including legislative changes if necessary. For example, the science makes assumptions about the timing of manure application. If the timing assumed as part of the assessment is not currently reflected in Iowa law, legislation should be proposed and adopted that requires manure application to be consistent with scientific best practices that are already assumed to be in place.

The science assessment is also noteworthy for what it does not do. It does not identify the baseline levels of nitrogen or phosphorous and that is a logical next step for scientific focus. It does not take into account the multiple benefits of best management practices. These additional benefits include flood mitigation, increased soil health, habitat and ecosystem health, and increased wildlife populations that in turn increase fishing and hunting opportunities. Inclusion of additional benefits of best management practices in analysis of those practices will allow for a more accurate assessment of how to pay for and implement those practices. Addressing the gaps is an important way that science can continue to inform and assist nutrient runoff efforts, and future scientific research should be focused on addressing these problems and taking into account all of the benefits of nutrient pollution efforts.

VI. Adding Farm Stewardship Plans to the Nutrient Strategy Would Address Many Critical Implementation Gaps and Help Prioritize the Use of Limited Funding.

It is essential that stewardship practices are implemented across the landscape in order to make meaningful progress on agricultural nutrient pollution. To achieve that end, each agricultural operation in the state should develop and implement a farm stewardship plan. We have developed an outline of what we think farm stewardship plans should look like and how they should be used in the larger context of the Nutrient Strategy.

The farm stewardship plan should be developed and tailored to the individual agricultural operation. The stewardship plans should identify the stewardship practices that could be

effectively implemented in an agricultural operation to conserve soil and minimize soil movement, improve soil health and fertility, keep nutrients where they are needed, and reduce nutrient pollution runoff. The practices identified will take into account the particular soil type and land slope. The stewardship plan will have a baseline or minimum set of best practices that the operation will implement. These baseline practices are already being implemented by responsible farmers throughout Iowa and could include practices such as buffers, grassed waterways, conservation tillage, livestock exclusions, timely applications of manure and other basic conservation best practices employed by responsible Iowa farmers. These operation specific baseline practices should be required of all agricultural operations – every Iowa farmer should do what responsible farmers are already doing as a minimum.

The stewardship plan will also identify additional practices that could be implemented in an agricultural operation to reduce nutrient runoff sufficient to help meet watershed goals or numeric criteria. These additional practices will be particularly useful in identifying how agricultural operations in priority watersheds can contribute to meeting watershed goals. The stewardship plan will draw on the science assessment from the Nutrient Strategy and other innovative scientific research to develop these additional practices. These additional practices could include bioreactors, wetlands, cover crops and other innovative practices.

The stewardship plans would also include critical information for an individual agricultural operation that would be just as critical for informing watershed-based work. The information would include current land use including descriptions of practices already implemented, results of soil testing, and timelines for implementation of stewardship practices identified in the plan.

The stewardship plans should also have a level of accountability. To provide part of this accountability, the stewardship plans should be certified. We think technical assistance in completing the plans and certification could be done by certified crop advisers. This would be consistent with the expanded role envisioned for certified crop advisers in the Nutrient Strategy.

In many instances, a farm stewardship plan would not be much different than the process responsible farmers now use to make business decisions every year. The farm stewardship approach addresses one of the most common concerns from the agricultural community about regulatory approaches and requirements – that they are "one size fits all." Farm stewardship plans recognize that every agricultural operation is different and assess each individual operation in order to find the combination of practices that will achieve results effectively and efficiently for that particular operation.

While farm stewardship plans should be required of each agricultural operation, a targeted implementation of farm stewardship plans could start in priority watersheds. Farmers in a watershed need to see that everyone is working together all along the landscape to achieve a common goal. In the alternative, farm stewardship plans have flexibility to be implemented on a voluntary basis as well. For example, a farm stewardship plan does not need to be universally required for it to be an eligibility requirement for new cost share on additional practices. The baseline in the plan would provide a minimum level of conservation practices implemented to trigger eligibility for cost share and only those who wanted a part of what will be very limited cost share dollars would be required to implement a plan. Cost share should not provide an incentive for responsible farmers to stop implementing practices in order to be paid to do what they already do or have done nor should it reward farmers who have not yet implemented accepted minimum best practices.

Implementation of the baseline practices in a farm stewardship plan should also serve as a minimum requirement before an operation could participate in a trading program. It's important that a trading program not replace what farmers should be doing on their own and that a trading program not provide an incentive for responsible farmers to stop implementing practices in order to be paid to do what they already do or have done. In both these cases, the farm stewardship plan would not be required unless an agricultural operation wanted to voluntarily participate in new cost share or trading.

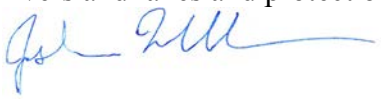
The Nutrient Strategy lacks detail on how it will ensure that practices are implemented across the landscape, how it will target practices in prioritized watersheds and how it will allocate limited funding resources. Implementing farm stewardship plans across all agricultural operations will accomplish these important objectives. Therefore, the Nutrient Strategy should include farm stewardship plans as part of its implementation.

CONCLUSION

The Nutrient Strategy has brought much needed attention to the problem of nutrient pollution in Iowa. The strategy has engaged the agricultural community and compiled a significant scientific assessment of practices that can be used to address the nutrient pollution problem. Attention without action that achieves significant nutrient pollution reductions is meaningless. In order for the Nutrient Strategy to effectively reduce nutrient pollution in Iowa, the final strategy document must make significant changes.

The Nutrient Strategy must address the Iowa consequences of nutrient pollution. A strategy focused exclusively on Gulf Hypoxia will not effectively engage Iowans and will not clean Iowa's rivers and lakes or protect our drinking water. The plan must comply with the Clean Water Act by including a detailed plan for developing and implementing numeric nutrient criteria and addressing how NPDES permits will include effluent limits based on narrative and dissolved oxygen standards. Both point and nonpoint sources must contribute to action in priority watersheds including more stringent technology based effluent limits for point sources in priority watersheds and implementation of farm stewardship plans by agricultural operations. The plan must go beyond aspirational statements and provide detailed actions steps, timelines for implementing actions, and opportunities for public input for all aspects of the strategy. Without that level of detail and public involvement, there can be no accountability and no way to determine if IDNR and IDALS are implementing the strategy.

We request a written response addressing our comments and how we can continue to be involved in the implementation of the Nutrient Strategy. We are ready and willing to work with anyone interested in making progress and developing real workable solutions to clean Iowa's rivers and lakes and protect our drinking water.



Joshua T. Mandelbaum – Staff Attorney
Environmental Law & Policy Center
505 5th Avenue, Suite 333
Des Moines, Iowa 50309
jmandelbaum@elpc.org

Steve Falck – Policy Advocate
Environmental Law & Policy Center
505 5th Avenue, Suite 333
Des Moines, Iowa 50309
sfalck@elpc.org

cc: EPA Region 7

EXHIBIT A:
ALGAE BLOOMS IN THE RACCOON RIVER IN DALLAS COUNTY

Photo courtesy of Iowa Environmental Council

EXHIBIT B:
ALGAE BLLOMS IN BIG CREEK LAKE IN POLK COUNTY

Photo courtesy of Iowa Environmental Council

EXHIBIT C:
FISH KILLS CAUSED BY AMMONIA AND LOW DISSOLVED OXYGEN

Photo courtesy of Iowa Department of Natural Resources

EXHIBIT D:
CYANOBACTERIA IN BLACK HAWK LAKE IN SAC COUNTY

EXHIBIT E:
SOIL EROSION ON IOWA FARMLAND

Photo courtesy of USDA NRCS

Iowa Environmental Council

521 East Locust Street, Suite 220
Des Moines, Iowa 50309
515.244.1194 phone
515.244.7856 fax
iec@iaenvironment.org
www.iaenvironment.org

January 18, 2013

Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, IA 50011-1010

Mr. Bill Northey, Secretary
Iowa Department of Agriculture and Land Stewardship
502 E. 9th St.
Des Moines, IA 50319

Mr. Chuck Gipp, Director
Iowa Department of Natural Resources
502 E. 9th St.
Des Moines, IA 50319

Re: Iowa Environmental Council Comments on the Iowa Nutrient Reduction Strategy

Dear Secretary Northey and Director Gipp:

The Iowa Environmental Council respectfully offers the following comments on the Iowa Nutrient Reduction Strategy (Nutrient Strategy). This strategy was released for public comment on November 19, 2012, and was prepared by the Iowa Department of Agriculture and Land Stewardship and the Iowa Department of Natural Resources, with technical assistance from an Iowa State University-led team of scientists.

These comments represent the views of the Iowa Environmental Council, an alliance of approximately 60 organizations, board members from business, farming, the sciences and education, and thousands of individual supporters across the state. We want to thank you for extending the comment deadline by two weeks, which allowed more Iowans, including many of our members, their first opportunity to review the Nutrient Strategy and offer comments and ideas to improve it.

The next step must be to carefully consider the viewpoints of all Iowans who submitted comments and consider incorporation of some of the best ideas into the Nutrient Strategy. In order for this document to truly be an "Iowa Nutrient Reduction Strategy," all Iowans need to know that their interest in clean water and demand for accountability for nonpoint source pollution reductions has been heard and has been heeded. Inclusion of these public concerns

will strengthen the strategy and ensure the public acceptance and buy-in necessary to meet the ambitious reductions goals.

A lot is at stake. Many of the Council's supporters remember past promises of clean-ups, past reliance on all voluntary compliance, and in the meantime, have to tell their children they cannot swim in the rivers and streams of their childhood.

The Iowa Environmental Council would like to make the following comments on the Nutrient Strategy:

1. **The strategy's main implementation plan for agricultural nonpoint sources is to rely entirely on voluntary conservation programs to meet reduction goals without demonstrating how these programs would be able to achieve the level of adoption of conservation practices outlined in the science assessment.** The strategy needs to include a reasonable plan with goals and timelines along with accountability mechanisms for failure to achieve progress toward increasing farmer adoption of conservation practices. While some progress has been made through adoption of conservation practices, none of the successes highlighted in the section on Iowa Conservation Progress (pages 13-14 of the strategy) have demonstrated the ability of current conservation programs to secure the level of practice adoption across the Iowa agricultural landscape identified in the ISU science assessment as being necessary to reach the 41% nitrogen reduction and 29% phosphorus reduction goals of the Nutrient Strategy.

   Milestones and accountability are critical for the strategy, especially given the strong headwinds which have always faced voluntary conservation programs. The Iowa Farm and Rural Life Poll reports that in the decade prior to the 2011 survey, 72 percent of responding farmers said they spent less than $5,000 on conservation efforts. Half reported spending nothing. One third said even if more money and technical assistance were available, they would not pursue additional conservation practices.

   Voluntary conservation programs will likely remain a part of farmland conservation in Iowa for the foreseeable future. Even if the alternative conservation scenarios proposed by the Iowa State team are suggestions, not policy recommendations, it is clear that significant increases in farmer adoption of certain conservation practices will be necessary to achieve the goals of the strategy.

   Unfortunately, as written, the strategy is not specific about what increases in practice adoption it aims to achieve, or by when. It articulates no plan for securing participation of those producers who have consistently not participated in conservation programs. This lack of goals for practice adoption is in addition to the fact that the strategy does not articulate specific water quality goals or interim pollution reduction milestones for Iowa's rivers and lakes.

The number of Iowa farmers who have implemented conservation practices is significant, and their efforts have produced important results. Unfortunately, the strategy continues to place conservation minded farmers at a comparative disadvantage to their peers who can choose not to participate in programs without facing consequences.

2. **The strategy needs to make a compelling case for how the reduction of nitrogen and phosphorus pollution would benefit Iowans.** As noted in the first paragraph of the executive summary, "The Iowa Nutrient Reduction Strategy is a science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico." The threats from nutrient pollution to clean water are self-evident to many Iowans. The strategy failed to emphasize the serious threats and short and long-term consequences of unsafe waters and why we need to reduce nutrient pollution for the benefit of Iowa waters.

   Excess nitrogen and phosphorus in Iowa waters along with eroded sediment are the largest water pollution problems in Iowa that are seriously affecting Iowans' use of our surface water for recreation and drinking water as well as impacting aquatic life in our rivers and lakes. Yet the strategy makes only passing reference to the significant impact of nutrient pollution on Iowa waters and why reduction of nitrogen and phosphorus is necessary to restore and protect local waters. If we expect Iowans to take action that will require significant changes in wastewater treatment and farming practices that will have significant private and public costs, it is essential that the strategy articulate that these changes provide benefits right here in Iowa AND to water quality downstream in the Gulf of Mexico.

3. **The strategy must include a strong commitment for development of numeric nutrient criteria for lakes and streams.** The criteria are one element of accountability that is totally absent from the strategy. These criteria are necessary to set goals for reduction of nitrogen and phosphorus pollution in Iowa waters that will restore and protect recreation, drinking water and aquatic life uses. The March 16, 2011 EPA memo "Recommended Elements of a State Framework for Managing Nitrogen and Phosphorus Pollution" (commonly referred to as the Stoner memo) says that state nutrient reduction strategies do not replace the need for states to adopt numeric nutrient criteria. In fact, the development of a work plan and schedule for numeric criteria development is a required element of the EPA framework.

   The EPA Stoner memo states that "It has long been EPA's position that numeric nutrient criteria targeted at different categories of water bodies and informed by scientific understanding of the relationship between nutrient loadings and water quality impairment are ultimately necessary for effective state programs" (EPA Stoner memo, page 3). Yet the Iowa strategy includes several statements that indicate opposition to the idea of adopting numeric nutrient criteria, including an entire section in the strategy background on "Numeric Nutrient Criteria Limitations" (page 6-8).

   The strategy does include a section entitled "Develop Work Plan for Numeric Criteria Development'; however the strategy emphasizes nutrient reductions from point and nonpoint sources in the near-term, "with evaluation of the ***need for*** nutrient water quality

standards long-term" (pages 22-23, emphasis added). This statement seems to question whether Iowa needs to adopt standards that will limit nutrient pollution levels in Iowa waters. This statement is particularly troublesome given the large number of nutrient impaired waters in Iowa including important recreational lakes and drinking water sources.

The strategy did not even take advantage of an opportunity to build upon recent efforts (e.g. recreational lake criteria) that were nearly through the regulatory process in the fall of 2011, but were pulled prior to final adoption. These criteria had the support of Iowans and would provide needed protection to Iowa's important public lakes that often suffer from algae blooms that make swimming and other water recreation unpleasant and, at times, unhealthy.

While progress can be made now toward meaningful reductions in nitrogen and phosphorus pollution that is already impairing our lakes and rivers, ultimately, numeric standards are needed to set the restoration targets and, once water quality is restored, to prevent new impairments.

4. **The Council supports the recommendations for expanding the roles for Certified Crop Advisors (CCAs) discussed on page 19 in the "Strengthen Outreach, Education, Collaboration" section of the Nutrient Strategy.** The Council further supports the use of CCAs to assist with the development of individualized stewardship or conservation plans for all farms. These farm stewardship plans would identify conservation needs on the farm and help initiate a planning process to review and select appropriate practices for nutrient reduction that will work best on the individual farm operation. The CCAs could continue to provide assistance with the implementation and evaluation of the effectiveness of these conservation plans over time. To ensure transparency and accountability, the plans should be public records.

   One important component of these new stewardship plans should be increased use and enforcement of Iowa's existing Soil Erosion Law under Section 161A.43 through 161A.66 of the Iowa Code. This law establishes the duty of property owners in Iowa to establish and maintain soil and water conservation practices as established by the commissioners of their county Soil and Water Conservation Districts in order to "conserve the fertility, general usefulness, and value of the soil and soil resources of this state, and to prevent the injurious effects of soil erosion." This law is little known by the public and underutilized and could be especially effective in areas where excessive erosion (greater than twice the applicable soil loss limit) is occurring and the land owner has chosen not to participate in voluntary conservation programs.

5. **The strategy must develop more specific implementation plans including sources of funding for evaluating net reductions of nitrogen and phosphorus rather than just quantifying reductions from adoption of new practices.** Use of a regular nutrient load estimate (nutrient budget) based on the ambient water monitoring data network, as mentioned in "Accountability and Verification Measures" on page 21, will be essential to

track progress of the reduction strategy. Another promising idea mentioned in the strategy is development of an Iowa Natural Resource Inventory (NRI) of management practices as mentioned under "Public Reporting" on page 22.

Both the monitoring and inventory of natural resources will be necessary for the public to track progress toward our reduction goals. The Iowa NRI will be especially important given the rapid changes in land use that are occurring in Iowa due to economic incentives driven by current high commodity prices for corn and soybeans. This includes reduction of CRP acreage in Iowa as well as conversion of pasture and other perennial cover to cropland. As documented in the strategy's science assessment, decreases in perennial cover will result in increases in nitrogen and phosphorus pollution runoff to waterways. Also many farmers in Iowa have been installing additional drainage tile in fields to improve production in wet areas or to bring new acreage into crop production. We know from the science assessment that increasing tile drainage will result in increases in nitrate losses from crop fields.

6. **Additional research is needed on the effectiveness of stream restoration practices to reduce sediment losses from eroding stream banks and to improve natural stream processes that remove nitrogen and phosphorus.** Erosion of stream banks is a significant source of sediment and phosphorus that is contributing to impairment of streams and lakes in Iowa and downstream. The science assessment evaluated practices that will reduce soil erosion on cropland, but did not include evaluation of practices that would reduce sediment losses from stream banks. Stream bank stabilization may be an effective practice in some watersheds and it would be useful to have measures of effectiveness and costs for this practice so that it could be compared to other conservation options. In addition, stream restoration practices that improve habitat and function of streams can enhance natural in-stream processes that remove nitrogen and phosphorus before it is transported downstream.

7. **Implementation of the Nutrient Strategy should be coordinated with implementation of the Iowa Nonpoint Source Management Plan (NPSMP) developed by a broad set of Iowa stakeholders to address nutrient pollution along with other nonpoint source pollution problems affecting Iowa waters.** Funding for implementation of the NPSMP that the state of Iowa receives through the Section 319 program is an important source of revenue for targeted conservation activities focused on restoration of nutrient impaired waters in Iowa. The Nutrient Strategy should build off of existing watershed plans completed under this program. These include TMDL watershed restoration plans for the Upper Des Moines River, Raccoon River and Cedar River where drinking water sources are impaired by high nitrates. These 3 TMDLS cover approximately 27% of the state of Iowa and include prioritized HUC-12 sub-watersheds. In addition, there are several completed TMDL watershed restoration plans that focus on phosphorus reductions for watersheds above lakes that are impaired by too much phosphorus that is causing frequent algal blooms. Utilizing work already completed under the 319 program would help get the Nutrient Reduction Strategy off to a good start.

8. **Going forward, the Iowa Nutrient Reduction Strategy development and implementation needs to be an open process that provides the opportunity for all Iowans to actively participate in the process.** The document states on page 9 that the Iowa Department of Agriculture and Land Stewardship and the Iowa Department of Natural Resources worked cooperatively with EPA Region 7 to develop the strategy. In November of 2011, DNR shared detailed information on the point source policy recommendations in the strategy with the Iowa Environmental Council and other environmental and conservation groups. At several occasions in 2012, the ISU science team presented findings of the science assessment at public meetings. However, the only information related to the nonpoint source policy recommendations shared with the public was that recommendations would take an "aggressive voluntary" approach. Only selected stakeholders representing agribusiness and commodity agricultural groups were consulted on the nonpoint source policy recommendations.

9. **A structure of funding and authority must accompany the increased expectations for the Water Resources Coordinating Council (WRCC) to lead implementation of the Nutrient Strategy.** A long-term funding mechanism needs to be established to provide resources for the planning and implementation of the strategy and to support the work of the WRCC. The strategy proposes to assign major responsibility for implementation of the nonpoint source reductions to the WRCC, including assessing and prioritizing HUC-8 and HUC-12 watersheds for nitrogen and phosphorus reduction and setting measures of success including indicators for measuring progress toward nutrient reduction goals. The WRCC has been in existence since 2008, but to date has not received adequate funding to achieve their existing mission and now is being asked to take on the task of implementing the nutrient strategy. Without a long-term funding mechanism there is little reason to believe the WRCC will be able to accomplish this task.

Thank you for the opportunity to comment on the Nutrient Strategy. If you have questions or need further clarification of these comments, the Council's staff and member organizations are ready to assist you.

Sincerely,

Ralph Rosenberg

Ralph Rosenberg
Executive Director
Iowa Environmental Council

1/18/13 10:00 am

01/18/2013

RIDGE-TILL IS A SUSTAINABLE SYSTEM OF CONSERVATION FARMING. IT PREVENTS SOIL, FERTILIZER AND CHEMICAL LOSSES BY PREVENTING WATER AND WIND EROSION OF THE SOIL AND THE WATER.

By Wesley F. Buchele, P.E., Ph.D.
Professor Emeritus of Agricultural and Biological Engineering

Agriculture was in crisis during the 1930s and 1940s. Rain water was eroding and washing off 30 to 50 tons per acre of soil each year from the hill-side farm lands of Iowa. The wind was eroding 5 to 15 tons of soil each year. The water erosion was cutting gullies in the sloping land.

Professor E.V. Collins of the Agricultural and Biological Engineering Department of Iowa State University invented, in the middle 1920s, the idea to pull a spike toothed or disk harrow behind the moldboard plow to create a continuous surface and fill the vertical air pockets in the soil to restrict the loss of soil moisture by evaporation.

Collins invented the damming lister in the 1930's to reduce the cross flow of water in contoured furrows to reduce water runoff and increase the infiltration of water into the soil. The two row damming lister had a rotating paddle in each farrow. The bottom paddle of the paddle wheel drug along the bottom of the furrow and collected a load of soil. The accumulation of soil in front of the paddle triggered the release of the paddle wheel latch and the paddle freely rotated one quarter of a turn and released a pile of soil in the furrow that would dam the cross flow of water in the furrow. This wonderful idea fell flat when no one could figure what to do with the field that was full of pockets of water and no place to drive the tractor.

Collins invented, patented and developed the whirlwind terracing machine in the 1940's. He had already installed contoured terraces on hill-sides and knew about the ability of contoured terraces to control soil erosion by reducing the length of the slope of the hill-side land between the terraces. He reasoned that using contoured ridges and furrows would minimize the length of the slope and would minimize the loss of soil and water.

He began conducting research on contoured furrows planted with corn in the late 1940s. We called that lister planted corn down in Kansas were I was born and raised. For the first year, Collins grew a bountiful crop of corn planted in contoured furrows on the loess hill-side soils of Western Iowa, The next year was a cold wet spring and the young corn seeds planted in the furrows sprouted but the plants later drowned and died in water that the ridges imponded in the ridges from rains, in the contoured furrows between the contoured ridges.

E.V. Collin began thinking about growing corn on contoured ridges where they would not drown in the imponded water.

Collins added Walter G. Loved to his team in 1950 and Wesley F. Buchele to his team in 1952.

The team invented and developed The Ridge-Till Stainable System of Conservation Farming during the early 1950's and developed the system over the next 15 years. It is an energy-efficient method for growing row crops like corn and soybeans. As I answered my Major Professor E.V. Collin's question during my Ph. D. oral exam, the system works on level and hill-side land; there isn't any other type of land. It reduces Soil and Water losses by water and by wind erosion. Ridge-Till maximizes yield with reduced use of pesticides.

The ISU Ridge-Till Research Team theorized that a new system of tillage should be developed that maximizes the ability of the soil to infiltrate water into the soil by holding the rainfall on the land where it falls rather than letting the water run downhill into a river and flowing to the gulf of Mexico. A three-dimensional land surface was developed by middle breakers or listers that held the water on the land where it fell and maximized the infiltration areas and paths for water infiltrating into the soil and air going and out of the soil.

We settled on the use of a ridge-furrow combination. The water infiltrates in the soil through the sides and bottom of the furrow and the air moves freely out through the top of the ridge.

The Ridge-Till Team wanted every row of corn or soybeans to be a contoured terrace. They decided to use contour furrows with a one-half percent slope in the furrow to the grassed waterway. Because land is not perfectly level, there will be pockets of impounded water in the buffalo wallows. The ridged soil reduced the volume of water flowing from the sides of the wallow into the buffalo wallow. It takes time for the water to infiltrate into the soil. We modified the profile of the ground to retain or impond the rain water in the furrows where the water fell and to give the water time to infiltrate into the ground rather than run off to the grassed water ways and flow down the Mississippi river with a load of Iowa top soil and chemicals. The team knew that surface roughness of the soil reduces the surface velocity of the water and wind and reduces the soil erosion by the water and wind. They believed that ridges would slow the velocity of both the water and wind and reduce soil erosion and loss of chemicals.

Side-hill erosion tests were conducted with the Rain Maker at the rate of two inches of rain per hour on side hill slopes of two percent, four percent and six percent slope. The treatments were Moldboard Plow Tillage, Till-Plant Tillage and Ridge-Till Tillage. The muddy runoff water from each row was caught for definite time periods. The data showed that the loss of soil from the plowed soil plots were five tons per acre. The loss from Ridge-Till plots were one-fourth ton per acre, or a ratio of twenty to one. Till-Plant treatment losses were between the other two treatments. I asked Bill Moldenhower why he ran the Ridge-Till rows up and down the slope rather than on the contour with a one-half percent slope in the furrows. He replied. "Well, if we run the rows on the contour, we would get no loss of soil from the ridge-till treatment."

Wesley F. Buchele, P.E., Ph.D. is the inventor of the large round bailer and the rotary threshing and separating cone/cylinder found in all American combines. He is the holder of 21 additional patents. He taught farm machinery design at Iowa State University for 26 years. He may be reached at 515-292-2933 or wbuchele@msn.com. His website is www.wesbuchele.com.

1/18/13
305

Comment on Iowa's nutrient Reduction Strategy

I support the Iowa Nutrient Reduction Strategy and encourage important state legislators to fund the strategy.

I farm in North West Benton Co. by Dysart. I started to use NO TILL in 1992 on land that is not highly erodible. I also use variable rate fertilizer and lime application.

I support a voluntary science based state nutrient strategy that has cost share payment to get farmers started using the conservation practices needed to keep the fertilizer and soil on all farmer farms. No till works great for keeping phosphors on my farm as it moves with the soil and I have very little soil moving.

I have also stabilized the creek banks on my farms by sloping back the soil and getting grass to grow or by using old broken cement to stop erosion of stream banks. The buffer strips along creeks are not as efficient in reducing soil runoff as grassed waterways in each field where the water runs to the creek. The buffer strips do no good on the high area between the low areas where the water flow. This is where the grassed waterway stops the soil movement way up the hill and not at the last 100 Ft. before it gets to the creek.

I read part of the letter from the EPA. I can see that the plan does not reflect the EPA'S current thinking about numeric criteria development and implementation to prove that the plan is reducing nutrients that are leaving the state of Iowa. They also want the TMDL numbers incorporate in this plan. The EPA wants the progress monitored and measured each year. This is a good time to use the good PR to promote the plan so more farmers will participate.

There need to be some credit for the conservation practices that have been used for the last 10 years, as the water is getting cleaner each year.

Thanks

Al Schafbuch
509 Sherman St.
Dysart, IA 52224
319-476-3727
Schafbuch69@gmail.com

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

JAN 22 2013

Secretary Northey, Iowa Department of Land Stewardship
Director Gipp, Iowa Department of Natural Resources
Dr. Lawrence, Iowa State University
Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, Iowa 50011-1010

January 16, 2013

Dear Secretary Northey, Director Gipp and Dr. Lawrence:

Environmental Defense Fund (EDF) appreciates the opportunity to provide our recommendations and comments on Iowa's draft Nutrient Reduction Strategy. Iowa, like all the Upper Mississippi River Basin states, faces significant challenges in delivering the agricultural nutrient reductions needed to achieve the goals laid out by the 2008 Gulf Hypoxia Action Plan. That plan seeks an ambitious but necessary goal of at least a 45% reduction in nitrogen and phosphorus loading to the Gulf of Mexico. In addition, achieving this goal will deliver significant reductions in nutrient loading that will benefit and protect Iowa's local water quality and drinking water supplies.

EDF applauds Iowa's leadership in being the first of the twelve Mississippi River states to advance a statewide nutrient reduction strategy, as called for under the Gulf Hypoxia Action Plan, and in taking a science-based, collaborative approach that focuses on all sources of nutrient loading. Iowa has a proud legacy as a leader in pioneering practices to address agricultural nutrient pollution, from wetlands sited and designed to trap and treat tile drainage water to adaptive nutrient management.

However, Iowa is unlikely to meet its nutrient reduction goals unless this conceptual strategy is quickly followed by action on-the-ground. Accordingly, we urge you to lay out a clear framework for implementing the Nutrient Reduction Strategy by:

1. Providing a robust strategy and time frames for developing watershed-scale plans that target the most effective practices to the acres that need them most to increase cost effectiveness and impact, set specific nutrient reduction goals, and establish baselines regarding nutrient loading and practice implementation;
2. Developing a clear process for documenting implementation;
3. Advancing innovations in research, demonstration, education and outreach; and
4. Developing a strategy to provide sufficient funding from *all* sources to implement the right practices in the right places at the watershed level.

While Iowa's Nutrient Reduction Strategy addresses both point sources and nonpoint sources, our comments below focus solely on the nonpoint source strategy, addressing each of the five categories of nonpoint source policy recommendations individually below.

I. Setting Priorities: Implementing the Iowa Nutrient Reduction Strategy at the Watershed-Scale
The EPA Recommended Elements of a State Framework for Managing Nitrogen and Phosphorus Pollution instructs states to prioritize 8 digit HUC watersheds on a statewide basis for nitrogen and

phosphorus loading reductions in light of the best available scientific information and to prioritize implementation of watershed-scale nutrient reduction strategies in high priority 12-digit HUCs within the larger 8 digit HUCs. The Iowa draft Nutrient Reduction Strategy points to an existing priority watershed identification process that factors in nutrient delivery as well as other issues, including "sediment delivery and flooding" (Sec1.1 at 15). The draft plan provides that the major 8 digit HUCs will be identified within a year by the Water Resources Coordinating Council (WRCC) in consultation with the Watershed Planning Advisory Council. Given the urgency and magnitude of the environmental challenge of addressing nutrient pollution, the existence of ongoing Iowa watershed planning efforts, and the availability of scientific analysis, such as SPARROW, showing watershed nutrient contribution, we strongly suggest shortening this timeframe for major watershed selection to 2-3 months. The Nutrient Reduction Strategy indicates that after selecting the major target watersheds, the WRCC, in consultation with the Watershed Planning Advisory Council, will then select high priority 12-digit HUC subwatersheds within these major 8 digit HUC watersheds. It is unclear what the timeframe will be for 12-digit HUC selection. We strongly recommend identifying and announcing these high priority subwatersheds as expeditiously as possible and certainly within a year. We also recommend providing the public with a list of the selection criteria for the 8 digit HUCs and the high priority 12-digit HUC watersheds within them and providing an opportunity for public comment on watershed selection.

We strongly suggest providing time frames and expectations as well as setting clear roles and responsibilities for development of watershed-scale plans at the high priority 12-digit HUC level. There should be ample opportunity for public participation and comment in development of these watershed-scale plans. This will not only help ensure a broad range of perspectives and innovative thinking goes into the plans, it will also create a higher level of buy-in at the local level.

It is also critical that these watershed-scale plans make the best use of limited cost-share program dollars by targeting the right practices to the right places based upon the best available science and information. Specifically, in agricultural areas/watersheds, it is critical to focus on three key opportunities to increase nutrient reductions from agriculture: significantly improved impact from 1) investments in nutrient management planning and implementation, 2) investments in wetlands, buffers, and other filters in the agricultural landscape, and 3) innovative strategies to advance expanded technical assistance and leverage cost share program dollars. Our recent study, "Thinking Like a Watershed: Midwest agroecosystems and hypoxia in the Gulf of Mexico" (attached) demonstrates that employing a mix of in field nutrient management practices and wetlands, buffers and other filters in agricultural watersheds throughout the Upper Mississippi River Basin watershed would be a cost effective approach to reducing agriculture-related nutrient pollution to the Gulf of Mexico. Similarly, while not recommendations, the Iowa Nutrient Strategy scenarios demonstrate that implementing infield nutrient management practices and wetlands, buffers and other filtering practices at the watershed scale in high priority watersheds would be a successful and cost effective approach to meeting Iowa's nutrient reduction goals. It is critical that the strategy for developing watershed-scale plans ensures that this "thinking like a watershed" approach is taken; that watershed scale plans are developed at the local level in high priority HUC digit 12 watersheds that target precious resource dollars to implementing in field practices and filtering practices where they are needed most. For example, Iowa CREP wetlands are highly effective at reducing nitrogen loading from upstream watersheds typically comprising loadings from multiple farms. Not every farm has an appropriate site for an Iowa CREP wetland; their effectiveness hinges on constructing these wetlands in geographically appropriate locations where landowners are willing.

For agricultural watersheds or areas, the Nutrient Reduction Strategy further prioritizes: 1) focusing conservation programs; 2) combining in-field and off-field practices; 3) implementing small watershed pilot projects at the 12-digit HUC scale; and 4) exploring opportunities for nutrient trading and other innovative approaches. First, we agree that it is important to focus conservation program outreach and implementation. In addition, we believe it is important to analyze where the existing barriers are to

enrollment and to prioritize addressing them. Second, we strongly support focusing on in-field and off-field practices. As the two-year analysis shows, a high level of implementation of both in field management and off-field filtration practices, such as treatment wetlands, is needed to meet nutrient reduction goals. Third, the Nutrient Reduction Strategy indicates that local stakeholders will, in conjunction with other partners, such as USDA, develop small watershed pilot projects (Sec 1.1 at 18). We strongly encourage providing further information. For example, will a request for proposals (RFP) be issued to and technical assistance funding provided to prompt and support local development of these watershed projects/plans? It is also unclear what the expectations are for these "pilot projects." We urge you to set a goal of developing watershed-scale plans/projects to address agricultural nonpoint pollution in *all* of the high-priority 12 digit HUC sub-watersheds in which this is a significant source of nutrient contribution. The term "pilot" should not be interpreted to mean that it is sufficient to pursue this approach in a few 12-digit HUC watersheds. We also urge you to provide local stakeholders with a framework for developing science-based suites of practices to address agricultural nonpoint pollution at the 12-digit HUC watershed scale, giving them a ready way to work with farmers to use the scientific information provided by the Plan and to get the right practices in the right places.

Finally, we strongly support Iowa's interest in exploring innovative approaches that can leverage conservation program investment. This is an exciting area and could provide a meaningful way to scale up implementation of some of the off-field practices, like treatment wetlands. As the Plan notes, these practices can entail relatively large upfront costs, but have low annual costs and long practice lives, resulting in low price per pound of nutrient removal. We strongly encourage Iowa not only to explore nutrient trading, but also to foster options for the agricultural community to help defray the initial up-front costs of treatment wetlands and other filtering practices through tax-deductible contributions to an entity designed to support IA CREP or other treatment wetland implementation. For example, upstream farmers who would benefit from installation of a CREP wetland by their downstream neighbor should have an easy way to financially contribute to this conservation work and to receive recognition for their stewardship. Such recognition could take a variety of forms, including helping farmers meet emerging supply chain criteria for soybeans and corn sourced in an environmentally sustainable way. State agencies should also favorably regard participation by upstream farmers in defraying the costs of wetland or other treatment installation when setting load allocations or other water quality expectations.

II. Documenting Progress

Creating and implementing a strong framework for tracking, evaluating, and, in light of lessons learned, revising watershed scale approaches over time is essential to ensuring the success of Iowa's efforts to meet nutrient reduction goals. With regard to agricultural areas/watersheds, we urge Iowa to:

- Further develop baseline understanding of nutrient inputs and practice implementation. We urge you to work with the agricultural community, agency experts, and conservation organizations to develop a framework to balance public need to know with agricultural business confidentiality concerns;
- Identify existing and further develop new cost-effective metrics for real-time evaluation of practice effectiveness. For example, metrics for how practices involved in nutrient management are *changing* management of nutrients;
- Identify and develop metrics that are spatially relevant. For example, metrics for filtering practices should provide insight into how much flow from the upstream contributing watershed is being treated. An Iowa CREP wetland, for instance, typically treats agricultural drainage from several farms; and
- Dedicate a funding stream and staffing resources for verification of practice implementation, including compliance and fulfillment of practices included in cost share contracts to ensure those dollars are being used for real impact.

Improving the ability to document nutrient reductions and improvements in management and conservation practice implementation is essential. The public sector support for continued funding depends upon being able to document results, and agricultural community support and implementation is also dependent upon being able to make a clear, convincing case that these investments are producing results.

III. Research and Technology

With respect to agricultural areas/watersheds, the Nutrient Reduction Strategy emphasizes the importance of developing "new technologies and creative solutions for nutrient reductions are needed to deliver and optimize implementation at full landscape scale" (Sec. 1.1 at 18). As we discuss more fully below under **Funding**, we recognize and agree that creative solutions are needed in order to get the suite of *existing* conservation tools implemented at a landscape scale. This is particularly true for filtering strategies, such as treatment wetlands, that provide dramatic nutrient reductions and are highly cost effective, but require a substantial initial upfront investment in construction costs and land retirement. While there is farmer interest in filtering tile drainage water (the Iowa CREP has a long wait list), rising costs – particularly rapidly escalating land costs – have constrained enrollment capacity. Currently, the Iowa CREP can only afford to enroll 2-3 wetlands a year. Fresh approaches are needed to leverage state and federal public investment. Such creative solutions could include participation by farmers who are upstream or otherwise within the contributing watershed to a planned wetland voluntarily contributing to help fund these practices through either tax deductible contributions to suitable 501(c)(3) charitable organizations or possibly as deductible business expenses provided to 501(c)(5) organizations.

We agree that research into new technologies can also be very helpful in reducing nutrient contribution from agricultural nonpoint sources. Further research offers the opportunity to more fully understand the strengths and challenges of potential new practices. For example, further research into directing tile into saturated buffers can provide valuable insights into appropriate siting criteria and can avoid unintended adverse consequences, such as practice failure. We agree that it is vitally important to dedicate sufficient funding to unbiased, peer-reviewed research of these potential new technologies. While we welcome and support such research efforts, we note that the existing mix of in field practices, including adaptive nutrient management, conservation tillage, and cover crops, and filtering practices, including wetlands designed and sited to treat tile drainage water, can, as demonstrated by the Nutrient Reduction Strategy scenarios, meet the nutrient reduction goals if they are implemented at the landscape scale.

Strengthen Outreach, Education and Collaboration

We agree that implementation of the Nutrient Reduction Strategy will require stronger outreach, education and collaboration, including "identifying new and enhanced ways for the private sector to provide leadership, new technologies and services to reduce nutrient transport" (Sec. 1.1 at 18). It is critical that private sector leadership and agricultural community stewardship extend to addressing the financial issues involved in implementing in field practices and filtering strategies at the watershed scale. Outreach and education are of limited utility if there is not adequate opportunity to participate in cost share programs due to limited financial resources; this is, of course, a critical barrier to implementation with regard to filtering practices that while highly effective, often involve significant upfront costs in construction and land.

We strongly agree that certified crop advisors (CCAs) can be an important partner. The new educational program offered through the American Society of Agronomy on the 4 Rs and adaptive management is a key opportunity to increase the level of technical knowledge on this critical practice and a crucial opportunity to enlist CCA support in providing outreach to their clients. We recommend that Iowa make a priority of helping to promote such educational opportunities, such as by creating a rewards/acknowledgement program for CCAs who take priority courses in the 4 Rs and adaptive nutrient management and who use what they learn to help farmers improve management. Iowa should reach out

directly to state and local CCA associations and to agricultural retail entities to engage their support, involve them in advancing solutions and to provide transparency.

Funding

Environmental Defense Fund believes that it is critical to advance water quality while maintaining the economic viability of agriculture. The Iowa Nutrient Reduction Strategy provides an important opportunity for agriculture to assume a greater leadership role in addressing nutrient runoff incidental to agricultural production. Given the magnitude of the nutrient reductions Iowa needs to make, the difficult economic times for the public sector at all levels, and today's high commodity prices and rapidly rising agricultural land values, it is critical that 1) maximum benefit be provided by each dollar invested in the nutrient reduction strategy; and 2) the private sector, particularly agriculture, contribute to leverage and further public sector investment. The draft Nutrient Reduction Strategy already provides for near term recommendations to the legislative and executive branches of state government regarding use of existing funding sources and, where applicable, reallocation of existing funding sources to fund implementation of the strategy (Sec. 1.1 at 19), but it is critical to grow the overall funding for implementation.

Sufficiently funding implementation of the Nutrient Reduction Strategy is the crux of the challenge of successfully reducing nutrient pollution. The draft Nutrient Reduction Strategy provides practice cost effectiveness data and scenarios that show that the nutrient reduction goal is achievable provided there is sufficient support and funding. While the scenarios were not intended as recommendations, they do provide helpful rough benchmarks as to likely total cost – $1.2 to $4 billion. This is an ambitious but achievable goal *if* a sufficiently ambitious and practical mix of strategies is employed to grow the total resources available to implement the Nutrient Reduction Strategy.

As discussed above, some of the most effective and cost effective practices in reducing nutrient delivery are filtering practices, particularly treatment wetlands, but often these practices entail significant upfront costs. Iowa and USDA Farm Service Agency have made a monumental contribution to the challenge of addressing row crop agriculture-related nutrient pollution in the UMRB through the Iowa CREP which seeks to construct wetlands situated to trap and treat row crop agricultural drainage water, cutting nitrogen/nitrate loads by roughly 50-90%. Iowa State University modeling predicts that if sufficiently implemented throughout the UMRB, these constructed treatment wetlands could cut nitrogen loading to the Mississippi River and Gulf of Mexico by 30% (Crumpton, W.G., G.A. Stenback, B.A. Miller, and M.J. Helmers. 2006. Potential Benefits of Wetland Filters for Tile Drainage Systems: Impact on Nitrate Loads to Mississippi River Subbasins). The scenarios in the draft Nutrient Reduction Strategy call for construction of approximately 4,000-12,000 IA CREP wetlands. These wetlands are also cost effective – *cost per pound.* However, given the significant initial construction costs (roughly $3,000 per acre) and rapidly rising land Iowa cropland values, the pace of IA CREP enrollment has dropped to 2-3 wetlands per year. Since the Iowa CREP was launched in 2001, 66 IA CREP wetlands have been constructed. At the current pace, it would take over a thousand years to construct a sufficient number of these wetlands at landscape scale in Iowa. Given the proven track record of this filtering practice in dramatically cutting nutrient loads when sited properly, it is critical that sufficient funding be allocated by state, federal and private partners to ramp up the pace of implementation. We strongly suggest:

- Significantly increasing the state appropriation for IA CREP funding (we note that while the Nutrient Reduction Strategy accurately notes that Iowa CREP budget held steady in FY 12 and FY 13 at $1,000,000 per year, this is a significant drop from $1,500,000 funding level in FY11);
- Increasing the USDA incentives to better leverage state investment and to allow state funding to extend to many more wetlands per year; and
- Providing innovative opportunities for private investment and donations to CREP funding, such as encouraging the agricultural community to make tax-deductible charitable contributions defraying the cost of wetland construction and land costs.

While an important practice, the treatment wetlands are an example of the larger funding challenge.

Like CREP, many NRCS cost share programs are oversubscribed. Additional funding is needed, for example, to meet the need for in field practices, like adaptive management and cover crops.

Finally, as discussed above, in light of the magnitude of this financial challenge, it is critical to try innovative new approaches to leverage public sector resources. We strongly encourage Iowa not only to explore nutrient trading, but also to create opportunities for:

- Tax-deductible business expenses for payments to 501(c)(5) agricultural or horticultural organizations for farmer or agricultural landowner funding that goes to pay for soil samples, etc;
- Tax-deductible contributions to 501(c)(3) organizations for constructed agricultural drainage water treatment wetlands or other wetlands, buffers or filtering practices that reduce nutrient loading.
- Supply chain or other private sector initiatives that recognize farmers and agricultural landowners not only for implementation of conservation on their lands but also for funding conservation. For example, a farmer may not have a suitable site for a treatment wetland on his or her land, but may he or she should be recognized if they chose to help fund construction of a neighbor's treatment wetland. Supply chain or other similar initiatives could, perhaps, be tied to the proposed farmer recognition program (Sec 1.1 at 19).
- Working with drainage districts to incorporate treatment technologies and beneficial design criteria into new, upgraded or replacement of aging drainage infrastructure.
- Direct nutrient trades as well as potentially other credit markets or initiatives for such co-benefits as flood storage, wildlife habitat and carbon storage.

We greatly appreciate this opportunity to provide our comments on Iowa's draft Nutrient Reduction Strategy. We would welcome an opportunity to discuss these recommendations and provide assistance to the state in achieving its water quality goals.

Sincerely,

Suzy Friedman, Director, Agricultural Sustainability
Environmental Defense Fund
1875 Connecticut Ave, NW, #600
Washington, DC 20009
sfriedman@edf.org, 202-492-1023

cc:

Ann Mills, USDA Deputy Under Secretary for Natural Resources
Jason Weller, NRCS Chief
Tom Christensen, NRCS Regional Conservationist for the Central Region
Nancy Stoner, Assistant Administrator for Water, US EPA
Susan Hedman, Regional Administrator for Region 5, US EPA

To whom it may concern:

I am writing in response to proposed Iowa Nutrient Reduction Strategy. Our community regularly uses the Shell Rock River for fishing, boating and swimming. Last summer, the water was greenish-brown and cloudy. I worried about what was in it, and the health of our kids who go tubing.
These may not be scientific terms, but the water is icky and smells funky.

We all know why it looks that way, but the proposal fails to hold the polluters accountable or change any behavior. Farm run-off is the primary cause. If the state fails to address it, we know why.

It is short-sighted to allow this situation to continue. In the long run, the soil and water are the patrimony of our state. We cannot expect to attract employers to Iowa if our natural resources are too polluted for recreation. I lived in Oregon for years, and watched the businesses come to Portland because employees wanted to live in a beautiful place, near great recreational resources. Destroying them in Iowa is not in our collective interest.

Susan Nelson
320 N. Main St.
Marble Rock, IA 50653-9701
snelson@myomnitel.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Erica Blair
752 Grant St
Iowa City, IA 52240-6228
515-368-1242
elblair08@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Anne Crotty
109 Cayman St
Iowa City, IA 52245-3957
319-325-7258
ancrotty@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jessica Hansen
1212 Park Avenue
Center Point, IA 52213-9418
319-361-7310
stretchstrengthengrow@yahoo.com