

## **Idaho Nitrate Symposium**

**December 4, 2014**

**Twin Falls, Idaho**

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### **Acknowledgement**

- Cal Lundberg, Dan Cook - Contaminated Site Section of Iowa Department of Natural Resources (DNR)
- Numerous Ag and Conservation Partners who assisted in the 13 SWP Pilot Projects

## OVERVIEW

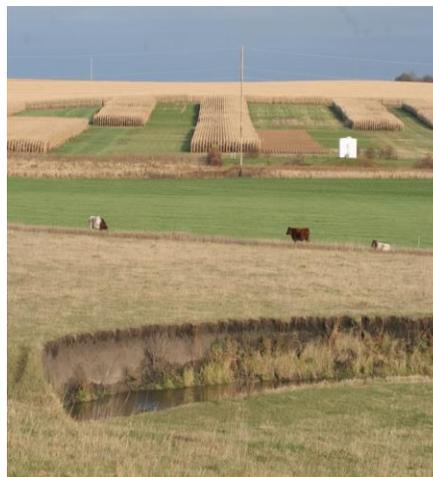
1. Iowa's SWP program: past, present, future
2. Watershed Based Approach to SWP
3. SWP Pilot Project(s)
4. The Value of Partnership in SWP Projects
5. Video – Iowa Public Television

### “PAST” Iowa SWP Program (prior to 2007)

- ~252 SWP Plans -**no** implementation
- Few BMPs *identified* for *ground-water systems*
- **Few** SWP resources – i.e. grants, partners, programs, technical assistnace
- Desk-top SWP assessment for community water supplies
- USDA's Conservation Reserve Program (CRP)
- Mechanical Treatment Options

## Iowa Currently Has:

- Number of Farms in Iowa?  
~ **90,000**
- Number of Public Wells?  
~ **3,300**
- % of Public Wells Located  
in Agricultural Areas?  
~ **90%**



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## One *Voluntary* Program:

- To Prevent Contaminants from Entering the Public Water Supply
- To *Ensure* Source Water Protection – Today –and– for Future Generations..



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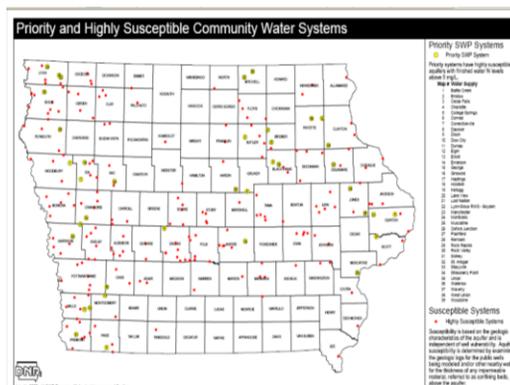
## We Live In Times of *Declining* Resources and *Increasing* Environmental Problems

### Complex Times Demand *Creative* Approaches To These *Challenges*

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### 2008 SWP Began To.....

1. Focus resources:  
Define highly susceptible CWS,  
~260
2. Create the  
“Targeted SWP  
Program”
3. Develop  
Partnerships!!!



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## Develop the “Watershed Approach” To SWP

1. Form **local SWP Team** (farmers, Ag retailers, conservation agencies/groups, city, water op, etc..)
2. Identify the problem/concern
3. Determine the source of the problem(s): PS, NPS?
4. *Inform & educate the local SWP Team – provide results of gw site investigation, i.d. priority area*
5. **Local Team** identifies BMPs & landowners
6. **Local Team** gain resources
7. **Local Team** implement BMPs
8. Evaluate results



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MY FOCUS:  
Developing Partnerships For An Effective  
SWP Local Planning Team

MY GOAL:  
Implementation To Reduce Risk To  
Source Water

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## Remsen SWP Team

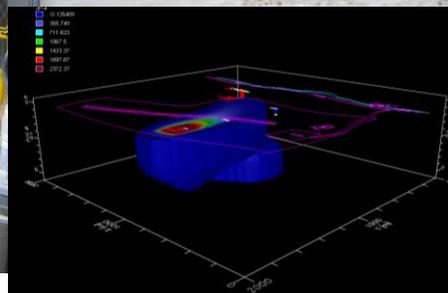
- Plymouth County USDA- Natural Resources Conservation Service and Farm Service Agency
- Plymouth County Pheasants Forever Chapter
- 7 Landowners/Farmers
- Plymouth County Soil & Water Conservation District
- Iowa SWP Program for Targeted Communities
- Remsen Municipal Utilities
- Sioux Rivers Resource Conservation & Development

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## Conducted Ground Water Site Investigation

### IDNR staff and equipment



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Local SWP Teams: Review information, discuss and develop SWP plan and identify resources, i.e. grants, loans, and in-kind



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**SOURCEWATER PROTECTION WORKPLAN**

**Municipal Utilities**

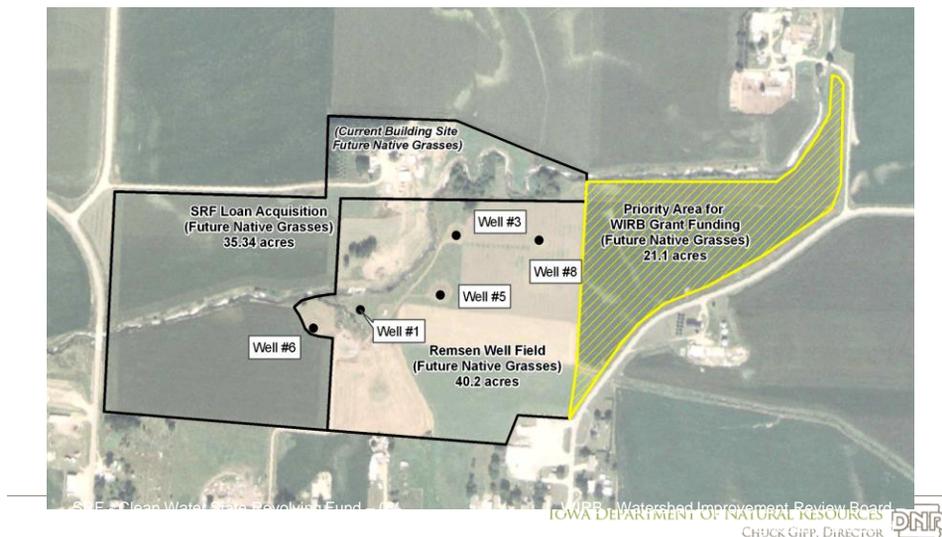
PWSID # \_\_\_\_\_

Date Initiated \_\_\_\_\_

Activity	Start Date	Date Complete	Who	% Done	Comment
Organize SWP Community Planning Team & Develop Member Contact List			Steve		
Contact IDNR SWP Program Coordinator - Schedule Meetings			SWP Chair		
Update SWP GIS Map					
Conduct Landuse Assessment			NRCS/Team		
Gather Local Information,			Team		
Conduct GW Site Investigation			IDNR		

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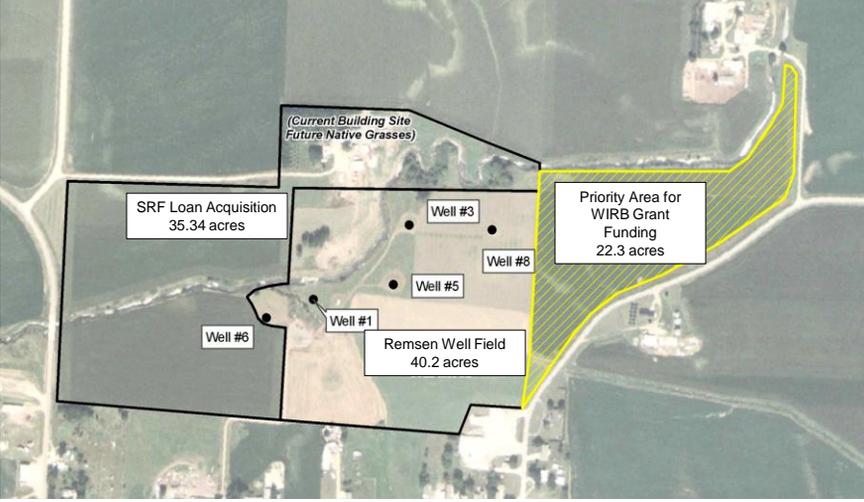
## Remsen SWP Implementation Planned



### Remsen Partnerships Provided:

- Iowa Watershed Improvement Review Board  
= \$168,000
- Iowa State Revolving Fund (0% interest)  
= \$499,000
- Plymouth County Pheasants Forever Chapter  
\$15,000 + in-kind assistance
- Iowa DNR groundwater site investigation  
= in-kind
- USDA programs and technical assistance  
= in-kind

# Local SWP Team- partner to purchase land



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## Remsen SWP Partnerships are KEY

Local Partnerships

State Partnerships

Federal Partnerships



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# Seeding and Signage (Completed by Pheasants Forever)

Spring 2009



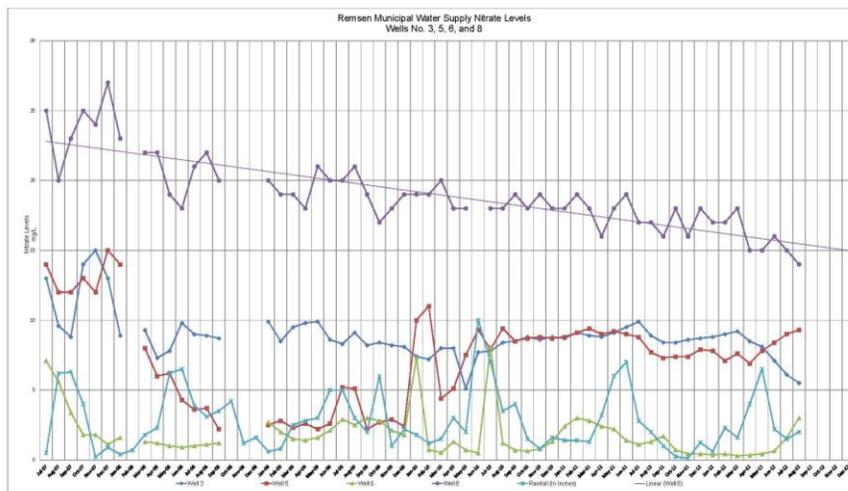
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## Third year of prairie grasses



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## Remsen SWP Pilot Project Results: Nitrogen Decreases



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### Remsen – Timeline - Accomplishments

- 2007 - Identified the NPS problem
- 2008 – Local team finalized SWP plan
- 2009 - Obtain financial and in-kind resources
- 2009 – Converted crop to native grasses

Remsen SWP Results:

**By 2013 .....**

- **Nitrate Reduction:**  
**27 mg/L to 13 mg/L**  
**(well # 8)**
- **2 mg/L Decline in finished water**

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## Remsen: Additional Benefits



- 2013 Governor's Water Quality Excellence Award
- 2010 AWWA National SWP Award
- Management of Priority Area
- Plan Outdoor Classroom
- Development of Walking Trail

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## Remsen's Cost:Benefit

- 2007 Estimated  
*Treatment Cost = 2.1 Million* with an annual  
O &M of **~\$50,000**
- **Grants/loans received for sustainable system: ~\$685,000**
- **SWP = ~ \$17,000**



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## 6 of the 12 SWP Pilot Projects:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>✓ <b>Remsen</b></li> <li>1. <b>Sioux Center (NPS)</b></li> <li>2. <b>Elliott (NPS)</b></li> <li>3. <b>Griswold (NPS)</b></li> <li>4. <b>Manning (NPS)</b></li> <li>5. <b>Dunlap (PS)</b></li> </ul> | <ul style="list-style-type: none"> <li>✓ <b>Converted Cropland to Native Grasses</b></li> <li>1. <b>Crop Rotations</b></li> <li>2. <b>Wetland</b></li> <li>3. <b>Cover Crops</b></li> <li>4. <b>Conservation Reserve Program-Wellhead</b></li> <li>5. <b>Nutrient Management</b></li> </ul> |
|--|---|

## Sioux Center SWP Team and Partnerships

- Farmers
- USDA – NRCS
- Dordt College
- Sioux Center Utilities
- Iowa Dept. of Ag & Land Stewardship
- Leopold Center for Sustainable Agriculture
- Iowa Dept. Natural Resource (IDNR)
- Sioux County Extension



Farmer, Dordt College, Leopold Center, City,  
NRCS, IDNR, Iowa Dept. of Ag



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Research Conducted to Develop SWP Practices for Nitrogen  
Reduction – A 5 Year Study to Assist SWP Efforts



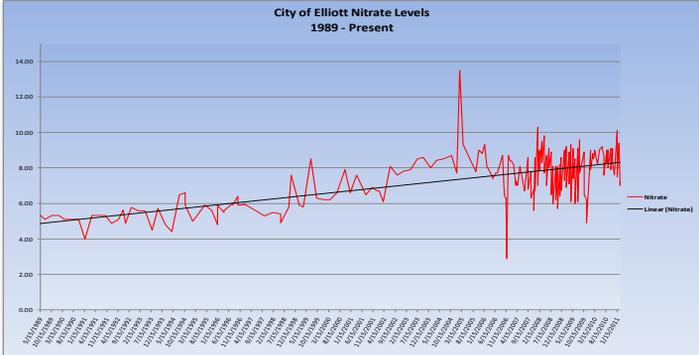
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### Leopold Center for Sustainable Agriculture: \$90,000 Land use Change – Crop Rotation to Decrease Risk



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Elliott, IA Treatment Est.= **\$600,000 + est. of**  
**~ \$40,000 Op & Maintenance per year**



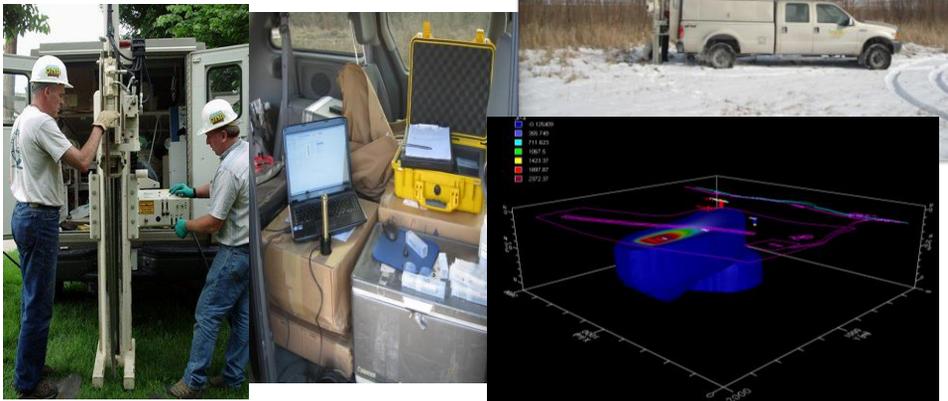
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## Elliott, Iowa SWP Planning Team and Partners

1. City of Stanton – donation of bridge
2. Griswold Schools – donation of land
3. Local landowners – land sale
4. Golden Hills RCD – grant writing
5. State Revolving Fund
6. U.S. Corps of Engineers - survey
7. U.S. National Parks Service - signs
8. Montgomery County Conservation - \$
9. IDALS Division of Soil Conservation – staff assistance
10. Iowa Department of Natural Resources – SWP for Targeted CWS Program
11. Montgomery County Board of Supervisors – staff, engineering, equipment
12. U.S. Fish and Wildlife Foundation 5 Star Grant - \$
13. Watershed Improvement Review Board (WIRB) - \$
14. Montgomery and Pottawattamie Co. Pheasants Forever-seed/maintenance
15. USDA Natural Resources and Conservation Service – engineering design, c/s
16. Resource Enhancement and Protection Grant (REAP) - \$
17. Montgomery and East Pottawattamie Soil and Water Conservation Districts - \$

## GW Site Investigation

### IDNR staff and equipment



# SOURCEWATER PROTECTION WORKPLAN

## Municipal Utilities

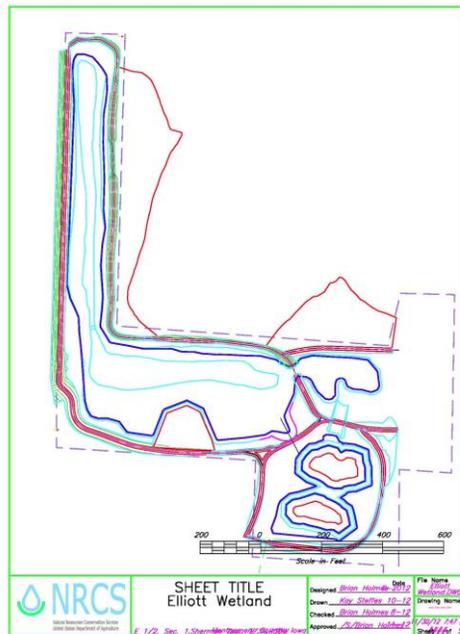
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Gather Local Information,			Team		
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NRCS and IDALS developed the wetland technical plans and obtained the necessary permits and program funds for the (re)construction of the marsh.



## Elliott SWP Implementation – Wetland 2013



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### *Elliott SWP Grants Received:*

~ \$350,000

- 2013 Wetland Constructed
- 2014 Outdoor Classroom
- 2014 Outdoor Shelter
- 2014 ADA Accessible Trail



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## Griswold Pilot Project

SWP Partners: Farmers,  
Conservation Agencies,  
City Utilities, Local  
Tiling Business Owner,  
Iowa State University  
Extension Service

- Ground Water Site Investigation
- SWP Plan Developed



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## Griswold

- **2013 Implemented:**
  - Cover Crops in Capture Zone
  - Received a \$90,000 USDA-NRCS Conservation Innovation Grant (CIG) & state cost share
  - 2013 DNR SWP program Installed Monitoring Wells



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## SWP Future Includes Utilizing:

- **2014 –SWP as it Pertains to the Iowa Nutrient Reduction Strategy:**
  - SWP language **added** to the Iowa Nutrient Reduction Strategy
- **2014 -USDA- Iowa’s NM 590 Standard:**
  - Iowa’s USDA –NRCS 590 Standard **Included SWP**
    - GIS maps of capture zone of Municipal Water Supplies

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## 2014 - The Iowa Source Water Ag Collaborative:



- Ag ri-Business Assoc., Heartland Co-op
- Cert. Crop Advisors
- Iowa State University
- Corn Growers Assoc.
- Iowa Soybean Assoc.
- Iowa DNR, USDA-NRCS & Farm Service Agency, Iowa Dept. Agriculture
- EPA

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## Iowa Source Water Protection Program



## Questions??

### Contact Information

[Rebecca.Ohrtman@dnr.iowa.gov](mailto:Rebecca.Ohrtman@dnr.iowa.gov)

Website:

<http://www.iowadnr.gov/Environment/WaterQuality/SourceWaterProtection/TargetedWaterSupplies.aspx>