Final Report 68-6114-17-022

Entity Name:	Prairie Rivers RCD		
Project Title:	Implementing Nutrient Reduction Strategies with		
	Urban Landowner in Squaw Creek Watershed		
Agreement Number:	68-6114-17-022		
Entity Technical Contact:	Penny Brown Huber		
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Contract Dates:	9/21/2017 – 9/30/2019		
Return this report to:	Judy.Martinson@usda.gov		

NOTE: Processing of the final payment request does not occur until the final report and the final Sf-425 have been submitted and reviewed.

I certify that, to the best of my knowledge, this progress report has not been previously submitted and that the program accomplishments will meet planned activities under this agreement.

Name/Title Date

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Directions: This report is due within 90 days of the completion of the project as described in the statement of work for this agreement. Please do not modify this report format. This report is a synopsis of the work completed during the agreement period. **All deliverables (see below) must be submitted to Iowa NRCS prior to closing this agreement.** Each task covered in the agreement and project funds expended must be documented within the form. Tasks not completed MUST be documented thoroughly within the appropriate task section.

Work products developed for a project task, but not submitted with a semi-annual report, such as promotional materials developed; PowerPoints, handouts, attendance lists, and evaluation results for training developed as a project task, task-related pictures of staff working a projects/training/other, etc., should be attached to this report.

Required Deliverables:

Italicized text is copied from Deliverables Table provided by Heather Friedrichsen, and represent items received in previous reports.

Task #1: Identify approximately 280 landowners in the five-mile fringe around Ames in the Squaw Creek Watershed.

1. Agriculture Planning Framework Toolkit maps.

Due date: 9/30/2019

June 2019 Semi-Annual Toolkit maps image and URL provided. Screenshot of site in SharePoint reports folder for agreement.

2. List of landowners to be contacted.

Due date: 12/1/2017

12.31.17 Semi-Annual Report, June 2019 Semi-Annual list of 233 landowners provided inclusive.

Note: The number of target landowners in project area was over-estimated in the grant application due to errors and duplication in the county land records, and was subsequently revised down.

3. List of Story and Boone Soil and Water Conservation District Meetings attended.

Due date: 9/30/2019

12.31.17 Semi-Annual Report, 6.30.2018 Semi-Annual Report, 12.31.2018 Semi-Annual report, June 2019 Semi-Annual report notes that the Boone County SWCD meetings were no longer attended after February 2019.

Task #2: Contact landowners and host outreach events.

1. Workshop/field day/meeting agendas to include Annual Workshops.

Due date: 7/31/2019

June 2019 Semi-Annual agendas provided for 5 events. 2 quarterly meetings are noted in report 6.30.18 report, and 3 in 12.31.18 report.

2. Publications and information materials.

Due date: 3/31/2019

12.31.17 Semi-Annual Report, 6.30.2018 Semi-Annual Report, 12.31.2018 Semi-Annual report, June 2019 Semi-Annual report

3. List of attendees to each outreach event, to include Annual Workshops and Quarterly small group meetings.

Due date: 7/31/2019

Semi-Annual 6.30.19 Notes 2 quarterly meetings held. Semi-Annual 12.31.18 notes 3 quarterly meetings held. June 2019 Semi-Annual report notes 5 events from 10.3.17 to 6.26.19. Number of attendees and a photo were included for all 5 events, while only 2 lists of attendees were provided.

4. Event evaluations for each outreach event.

Due date: 7/31/2019

June 2019 Semi-Annual report - one set of evaluations for one event dated 7/7/18 B.

The Iowa Learning Farms evaluation provided is the only event evaluation we have available. At the other four events, Prairie Rivers of Iowa had attendees fill out registration cards at the beginning, but neglected to prepare an evaluation form to distribute at the end. Anecdotally, we received uniformly positive feedback on the native planting workshop and the wetland field day. The bioreactor demo day (held at the construction site) was limited by cold weather and an off-road location. Some attendees of the kick-off workshop expressed confusion about the project—who is Prairie Rivers of Iowa, and why would you focus on small farmers for water quality when big farmers are the problem—and skepticism toward cover crops, but said they learned a lot from the presenters—Linda and Pat Murken. Based on the post-participation evaluation (Deliverable 3.4), 34% of technical assistance recipients learned about us in part from a field day.

5. List of producers met with individually.

Due date: 9/15/2019

Semi-Annual 12.31.17 notes 12 one-on-one meetings took place. SemiAnnual 6.30.18 notes 10 one-on-one meetings tool place. Semi-Annual 12.31.18 notes that 14 one-on-one meetings took place. Semi-Annual Report 6.30.19 notes 6 one-on-one meetings took place.

Since the last semi-annual report, we have had eight one-on-one meetings with producers.

Name	Date	Watershed	County	TWSP	S/T/R	Type of Assistance
Dan and Ruth Wiedemeir	6/1/2019	Squaw Creek	Story	Colfax	12-83-25	Water ways, tile, cover crops, native seeding
Denise Farley	7/16/2019	Squaw Creek	Story	Harrison	5-85-25	Stream bank erosion, grazing
Katherine and Herbert Fromm	8/14/2019	Squaw Creek	Story	Franklin	29-84-24	CRP, Riparian forest management
Jim and Donna Richardson	8/26/2019	Boone River	Hamilto n	Freedom	35-88-26	CRP management, windbreak
Chad Harswick	8/27/2019	Squaw Creek	Story	Franklin	17-84-24	Pollinator Planting
Ryan Peters	8/27/2019	Indian Creek	Story	Indian Creek	26-82-22	Runoff/water diversion
Roger Engstrom	9/25/2019	South Skunk	Story	Milford	20-84-23	Runoff and drainage
Linda Tucker	9/30/2019	Indian Creek	Story	Indian Creek	06-82-22	CRP/native plantings

See attachment (Task 2, Item 5) for a comprehensive list of producers met with during the project, grouped by type.

Task #3: Collect planning documentation for NRCS staff and provide technical assistance for implementing conservation practices.

1. Provide NRCS with collected planning documentation.

Due date: 9/15/2019

See attachment (Task 3, Item 1). We have attached notes from each field visit with a landowner, including legal description, contact information, resource concerns discussed, recommendations made, and referrals made.

In an email exchange from August 2017, we were told we would not be required to submit CPA-52. We requested clarification as to the type of planning documentation required in our June 2019 semi-annual report but did not receive any instructions.

2. Provide names, dates, locations and acres of conservation practices in progress and completed.

Due date: 9/15/2019

Semi-Annual Report 6.30.19 - Document "3.2 conservation practices completed" notes one denitrifying bioreactor and 765.05 acres of cover crops installed

See attachment (Task 3, Item 2) for names, dates, and locations of additional practices (CRP and timber management) not noted in previous report.

3. Document implementation of completed conservation practices.

Due date: 9/15/2019

Semi-Annual Report 6.30.19 - Certifications for WQI practices submitted

4. Provide analysis and data results from producer post program-participation evaluations

Due date: 9/15/2019

We administered an evaluation by phone to the 18 participants in the Squaw Creek Watershed.

See attachment (Task 3, Item 4) for individual responses and comments. A summary is provided below.

Quality of the meeting	Avg 8 of 10		
Quality of the information provided	Avg 8 of 10		
How did you find out about the program?			
Mailing only	66%		
Mailing and event	17%		
Event only	17%		
Where do you go to get information on conservation programs/practices?			
NRCS	56%		
Online	33%		
ISU Extension	11%		

Have you worked with NRCS on conservation projects on your land?			
Yes	83%		
No	17%		
Is cost share/financial assistance for conservation projects a major part of the decision to do conservation on your land?			
Yes	50%		
No	17%		
It depends	33%		
Do you have major conservation work you would like to get done?			
CRP	39%		
Streambank erosion	22%		
Native plantings	17%		
Timber management	11%		
Other	11%		

Task #4: Complete Conservation Planner training.

1. Complete the classroom and online training required to achieve the NRCS Apprentice Conservation Planner role as it becomes available.

Due date: 9/15/2019

Progress noted in June 2018 and Dec 2018 - Semi-Annual Report 6.30.19 - invoice for Rusle-2 and Iowa Phosphorus Index Workshop class provided due to no certificate of completion issued. Notes that there was no other training for NRCS partners provided as no list of classes was provided.

2. Provide copies of the certificates of completion for completed classes.

Due date: 9/30/2019

Semi-Annual Report 6.30.19, 24 hours of Stream & Watershed workshop certificate provided

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3. Provide documentation for 40 hours of the topics covered during OJT training.

Due date: 12/31/2017

Semi-Annual Report 6.30.19 Deliverables document pg 35 lists topics covered but does not record hours.

We do not have documentation of hours by session. Kayla Bergman and Mike Brandrup met with Hillary Olson (Story County NRCS) for 6 sessions averaging 3 hours each. Kayla Bergman also reported for two days of work at the Story County NRCS office. There seems to be a disconnect between the state office, which thought we could help with administrative workload, and the local office, which had no tasks to assign us. This totals 54 person-hours of on-the-job training.

I. Executive Summary (Project Synopsis and Process Summary)

The goal of the project was support the Iowa Nutrient Reduction Strategy by providing education and technical assistance to a group of rural landowners near the city limits of Ames that, owing to the small size of their holdings or non-traditional nature of their operations, are underserved by NRCS.

We met our objective to increase awareness of conservation practices by hosting 5 field days, and sharing information with at least 10 other gatherings. We met our objective to provide technical assistance by conducting 47 one-on-one meetings with landowners and assessing resource concerns and conservation opportunities on 2,119 acres of land.

We focused our efforts on landowners within the Squaw Creek watershed so as to tie into an ongoing watershed project funded by a state Water Quality Initiative (WQI) grant. As an operational definition, we focused on people who owned between 10-100 acres of land zoned for agriculture, within 5 miles of the Ames city limits. These thresholds were somewhat arbitrary and may be worth revisiting in future projects. The land in question might be row crop fields, specialty crops, pasture, or forest and natural areas. Some landowners had a farming background and some did not. Some owners of farmland were involved in crop production, and others rented out the land.

Compared to large-scale corn and soybean farmers, we assumed that this group would:

- 1) Be more receptive to conservation practices that take land out of production,
- 2) Be less familiar with the NRCS and with Farm Bill conservation programs, and
- 3) Adopt conservation practices at higher rates that can support the Iowa Nutrient Reduction Strategy.

Assumption 1 is likely true. Many of the people we spoke to had a strong land ethic and were interested in maintaining part of their property as prairie, woodland, or wetland. Economics and cost share, with the exception of CRP rental payments, was not a deciding factor in their land management decisions. Focusing on these landowners could have outsized benefits for initiatives concerned with wildlife habitat or riparian corridors.

Assumption 2 appears to be false. 83% of the 18 respondents in our post-participation evaluation had previously worked with NRCS for conservation projects on their land, and all who were eligible had some land enrolled CRP.

Assumption 3 appears to be false. While we documented one bioreactor and 200 acres of cover crops among urban fringe landowners of 10-100 acres, this represents a small reduction in nitrogen and phosphorus compared to the 1529 acres of cover crops and and 2300 acres we helped install in the larger watershed in 2018. We assisted with management, enrollment, or reenrollment of 580 acres of CRP. However, only 264 acres were in the watershed. While our nutrient reduction goals cannot be met if existing conservation lands are degraded or put back into production, only a net increase in CRP acres will lead to measurable nutrient reductions relative to the baseline.

Based on responses to our post-program evaluation, the technical assistance was appreciated and needed. However, less than half of our technical assistance was delivered to our target audience and project area, due to a frustratingly low response to our mailing campaign.

Additionally pre-grant submission, we had discussed an arrangement with local NRCS staff whereby we could increase utilization of farm bill conservation programs in Story and Boone counties without increasing their workload. Prairie Rivers of Iowa would make the initial contact with landowners, walk the land, discuss resource concerns, collect some initial documentation, and refer them off to NRCS staff once they selected a conservation practice to install. This arrangement would have been greatly facilitated by having a staff member trained as an Apprentice Conservation Planner, as specified in the grant agreement. Unfortunately, no courses were offered and no guidance was provided on how to do this. Tracking and documentation of conservation practices installed would have been greatly facilitated by working in the USDA office and having access to USDA systems and files. In the absence of this kind of support, we can only provide documentation for WQI cost share that we administered.

Discussion by Task:

Task #1: Identify approximately 280 landowners in the five-mile fringe around Ames in the Squaw Creek Watershed.

GIS Tech Dan Haug identified landowners of 10-100 acres with farms in the project area using county parcel records in ArcGIS by 09/15/2017. Addresses in the parcel database were used to send two general mailings about the program and invitations to each or our five field days. GIS was also used to identify a subset of landowners with potential for bioreactors and saturated buffers for a targeted mailing about two events focused on edge-of-field practices.

The land records used have some serious limitations. Parcel data is maintained by county and there are no standard formats; it is virtually impossible to combine land records from two counties. County parcel records are set up as flat tables with an entry for each parcel, and cannot easily be converted to a normalized database. When grouped by deed holder, it is likely that the same address and household will appear multiple times. For example, the same address could be listed under the four deed holders John Smith, John C. Smith, John and Jane Smith, and John C. and Jane. A. Smith. Many of the addresses listed were undeliverable. Major edits were made to the database and mailing list in Sept 2018 and June 2019. As a result, the number of households in our mailing list shrank from 280 to 233 to 188.

Task #2: Contact landowners and host outreach events.

Addresses in the parcel database were used to send two general mailings about the program and invitations to field days. Landowners with potential for bioreactors were sent a targeted invitation to our bioreactor installation event. To express appreciation and offer additional help, a subset of landowners received a thank you card with a photo of their conservation practices taken from the road and the message "Thank You for Being A Good Conservation Neighbor." A targeted mailing was sent to landowners in the project area enrolled in the Forest Reserve Program offering conservation assistance for both their forest and farmland.

Prairie Rivers of Iowa hosted five field days

Field Day/Workshop	<u>Date</u>	Location
Squaw Creek Landowner Field Day and	10/3/2017	Murken Farm, Story County
Workshop		moved to Gilbert City Hall
		due to rain
Bioreactor Demo Day	11/10/2017	Reutter Farm, Boone County
Denitrifying Bioreactor Field Day	7/17/2018	ISU Field Extension
		Education Laboratory, Boone
		County
Conservation Conversations: Native Planting	9/25/2018	McFarland Park, Story County
Management workshop		
Wet Lands Wet Times - PRI Field Day, NRCS,	6/26/2019	Kamrar Wetlands (Hamilton
IDALS, IWMB		CCB)

Meetings and events held by the Squaw Creek Watershed Management Authority or local conservation groups were a good opportunity to share information about the project, make contact with interested landowners, and facilitate peer-to-peer learning about conservation practices. Land Management Specialist Mike Brandrup serves on the Hamilton County Conservation Board and active in Pheasants Forever. While outside the project area, these meetings in Hamilton County resulted in a large number of requests for technical assistance, which we met when workload allowed.

Small Group Meeting	<u>Date</u>
Hamilton CCB,PF, landowners	4/5/2018
Squaw Creek WMA Meeting	7/19/2018
HCCB, Ham. Co. PF, Izaak Walton	8/1/2018
Ham. CCB & Legacy Learning Boone River Valley	9/29/2018
Hamilton CCB Alliant Energy Tree Program	10/4/2018
Squaw Creek WMA Meeting	10/18/2018
Pheasants Forever	3/25/2019
Conservation Tour -Women Food and Agriculture	4/10/2019
Control burn Workshop - Ham. Co. Cons. Board	4/16/2019
HCCB, Ham. Co. PF, Izaak Walton	7/31/2019

Task #3: Collect planning documentation for NRCS staff and provide technical assistance for implementing conservation practices.

Land management specialist Mike Brandrup provided technical assistance at 47 one-on-one meetings and assessed resource concerns and conservation opportunities on 2,119 acres of land. Landowners are described in more detail under the Results section. A typical meeting took place on-site to walk the land, discuss maintenance of existing practices, new resource concerns, and learn about the landowners' goals for the property.

Brandrup took notes on the parcels, landowners, and resource concerns discussed at each meeting, as included in the attached Deliverable 3.1. However, in the absence of training or guidance from NRCS, we were not able to complete more formal documentation or conservation plans.

Task #4: Complete Conservation Planner training.

Prairie Rivers of Iowa employees Mike Brandrup and Kayla Bergman received 40 hours on on-the-job training with an Area 2 staff member, Hillary Olson.

Kayla Bergman received training on RUSLE-2 from ISU Extension, while Mike Brandrup and Dan Haug received training on Stream and Watershed Integrated Management from Iowa Department of Natural Resources.

The classroom and online training needed to achieve the NRCS Apprentice Conservation Planner role was never offered, and NRCS did not provide a list of coursework.

Funding Received and Expended

Please insert table noting all federal and match funds received and expended. Please identify funding using the approved budget categories specific to your Agreement. (Note: Examples of approved categories are Personnel, Travel, Supplies, Fringe Benefits, Equipment, Contractual, Other, and Indirect Costs.)

Category	NRCS Cost	Organizational Cost	Total
Personnel	\$105,002.37	\$22,880.00	\$127,882.37
Travel	\$2,398.46	\$0.00	\$2,398.46
Supplies (paper, ink)	\$1,256.93	\$651.12	\$1,908.05
Other	\$0.00	\$19,126.25	\$19,126.25
Indirect	\$10,873.66		\$10,873.66
TOTAL	\$119,531.42	\$42,657.37	\$162,188.79

II. Project Results and Evaluation

We sent out multiple mailings with a variety of materials—field day invitations, a program information packet, thank you cards to landowners already doing conservation. These generated very few request for technical assistance. After removing duplicates and bounced addresses, our mailing list numbered 188. We provided technical assistance to 18 landowners in our watershed, only 15 of which said they learned about the program through mailings. This is a response rate of 7%. In contrast, we generated 12 requests for technical assistance from field days and word-of-mouth in Hamilton County, and 8 requests from local government entities, which we accepted when no other requests were forthcoming.

Land management specialist Mike Brandrup conducted 47 one-on-one meetings to provide technical assistance to landowners and assessed resource concerns and conservation opportunities on 2,119 acres of land.

- 25 meetings were with our target population—owners of 10-100 acres of land zoned for agriculture
 - o Of these, 15 farms or acreages were located within the project area
 - One was located within the watershed but more than 5 miles from Ames city limits
 - o 9 were located outside the watershed
- 9 meetings and 4 follow-up visits were with landowners not in our target population
 - o 7 landowners with >100 acres, all outside the Squaw Creek watershed
 - o 1 landowner with <10 acres, in an unincorporated neighborhood within the watershed
 - o 1 meeting with a large real estate company, regarding a holding in CRP
- 8 meetings and 1 follow-up visit were with public entities—the Hamilton County Conservation Board, Story County Conservation Board, and the City of Stanhope. In some cases the v

The technical assistance provided was useful and appreciated. The 18 respondents to our post-program evaluation scored the land visit and the information they received no lower than a 7/10.

The most common conservation program discussed was CRP. Land retirement is a key practice in the nutrient reduction strategy, reducing nitrogen load by 85% and phosphorus load by 75%. We provided technical assistance for landowners interested in enrolling, re-enrolling, or managing 580 acres of CRP, 264 acres of which was within our project area. However, in the absence of an information sharing agreement with our local NRCS/FSA offices, we cannot provide certification of these acres.

As matching funds for the project, we documented one denitrifying bioreactor and 765.05 acres of cover crops installed within the project area during the grant period. These were funded by IDALS and processed by Watershed Coordinator Kayla Bergman, as part our Water Quality Initiative project in the Squaw Creek watershed. However, we must acknowledge that 3 of 6 landowners own more than 100 acres, and we had been working with the small landowners prior to the start of the project. This illustrates the importance of long-term relationships and sustained outreach for achieving conservation outcomes.

III. Potential for Transferability of Results

In practice, the urban fringe was challenging for conceptualizing our target group of landowners, and our experience is probably transferable to those working with small farmers, acreage owners, and owners of recreational land throughout Iowa. Most landowners we spoke with were willing to install long-term conservation practices like CRP, riparian buffers, native grass and forb plantings, wetland restoration, and forest management. A majority of respondents in our post-program evaluation said cost share for installation was not a deciding factor in their decision to put in a conservation practice, but rental payments are

helpful. Given the focus on EQIP in the newest farm bill, there may be a disconnect between federal priorities and local needs. Gully erosion and streambank erosion were common resource concerns. While there may be few cost-effective ways to address these concerns, better educational materials on these issues and referrals to service providers where appropriate could do a lot to build up trust and open the door for discussing other conservation practices.

The main point we would like NRCS administrators to take away from this report is that getting conservation practices on the ground takes time. For example:

- One bioreactor was installed in our watershed. The landowner was interested in the practice at the first meeting, but it took 28 months to complete the survey and design work, process the cost share application, coordinate with his brother, and line up the contractor.
- If a landowner is not committed to a practice at the outset, it takes several interactions to build up trust and knowledge. Of the 3 landowners we talked to that pursued bioreactors, 2 came to us with concerns about erosion or native plantings.
- Several of our respondents (3 of 18) admitted that our postcards or fliers had been sitting on their desk for six months before they got around to calling us

To the extent we were successful in meeting our objectives within the two year timeframe of this grant; it was because we had spent the previous two years working with farmers in the Squaw Creek watershed. When grantors ask for projects that use new approaches or reach new audiences, this can work at cross-purposes to the long-term relationship building required to get conservation practices on the ground.

A key lesson for NRCS partners managing watershed projects is not to depend on direct mailings. With a low response rate and small project area, you may not generate enough requests for technical assistance to keep your staff busy or meet practice implementation goals. County tax records were a viable way to obtain addresses for landowners in a watershed, with the caveat that the same household may be listed five different ways, but do not reach the operators who may be more engaged with production decisions. We had few responses from our mailings, and several who did respond waited up to a year to contact us. Field days and networking generate more requests for technical assistance, but may not be within the target watershed. A solution may be to cast the net widely when doing outreach and initial consultations (so as to generate more contacts by word-of-mouth), and then prioritize land visits or financial assistance to target watersheds.

IV. Conclusion

Before making any pronouncements about small farmers or landowners in the urban fringe, it is worth revisiting what were rather arbitrary thresholds—5 miles from town, 10-100 acres in size—for delineating the project area and target audience.

Our archetypal "small landowner" was the presenter at our first field day. Linda Murken, a retired corrections director and current county supervisor, owns a farm of 80 acres near Gilbert. The front 40 near the house has been restored to prairie and enrolled in CRP. Since the land is her family legacy and the view from her window, but not her livelihood, Linda can make land management decisions without worrying about short-term profit. The back 40 is farmed with cover crops by her cousin, Pat Murken. As a small operator farming 280 acres, Pat modifies his own equipment and experiments with legume mixes, a very different approach to cover crops than some of the larger farmers we have worked with.

However, through our WQI project, we have worked with landowners with more than 100 acres who have a similar profile and concerns. A female landowner 30 miles from Ames near Stratford wanted help communicating with tenants to transition her 143 acre farm to strip-till and cover crops. A female landowner 5 miles from Ames with 131 acres—some of it rented, some of it in CRP—wanted help managing her riparian forest buffer planting and installing a bioreactor to manage erosion and treat water quality from a tile outlet.

The lower bound of 10 acres was chosen so as not to waste our time with rural residents who are not eligible for Farm Bill programs. However, landowners with less than 10 acres may still generate enough farm income to qualify for EQIP, as described in the 2014 USDA Report "Working the Land With 10 Acres: Small Acreage Farming in the United States." Since the endangered rusty patch bumblebee was found at a prairie garden with the City of Boone, Prairie Rivers of Iowa can no longer discount urban land and has secured new funding sources that allow us to work with residential landowners.

The 2006 Ames Urban Fringe Plan covered the area within 2 miles of the city limits, an area of rapid development requiring coordination with the county and nearby towns. While it was not the focus of this project, there are some unique opportunities for conservation on agricultural land slated for development. We talked with a real estate company about erosion and conservation easements on part of a property planned for residential development. Story County was able to negotiate for the "Tedesco Environmental Learning Corridor (TELC)," a public park and stream restoration project, to be incorporated in the ISU research park developed on the south edge of Ames. We are currently talking with a farmer near the TELC who is interested in protecting his land from development by restoring it to prairie.

At the suggestion of Ames city staff we focused on a 5 mile rather than 2 mile radius from Ames. The portion of the Squaw Creek watershed within 5 miles of city limits does differ from the larger Squaw Creek watershed, with a lower proportion of row crop agriculture and much higher proportion of forest land, much of it concentrated along lower Squaw Creek.

Land Cover in Squaw Creek Watershed

	>5 miles from city	0-5 miles from
	limits	city limits
Row Crop	84%	76%
Grassland	9%	10%
Forest	1%	6%
Developed	6%	8%

Perhaps that is because within commuting distance from Ames there are more people like the dentist we talked with, who is willing to convert his acreage to wetland without regard to cost share availability. However it is not fair to say that small landowners, or those close to town, are all more receptive to conservation practices involving land retirement. A man who farms 100 acres with his brother selected a bioreactor precisely because he wanted to reduce nitrogen while keeping his land in production.

The needs we saw most often identified from all the landowners we worked with are:

- Technical assistance, where NRCS offices are too understaffed to arrange meetings in a timely manner
- Rental payments or easements that would allow marginal wet or riparian land to taken out of production
- Guidance on dealing with gully and streambank erosion
- Help navigating a confusing array of programs and agencies

As we look to future projects of this nature the greatest challenge to overcome is how to make meaningful contact with the landowners and to gain that initial request for assistance.