



TRANSLATING THE PLAN TO PRACTICE:

Strategies for Achieving Implementation

George J Boggs
March 22, 2011

“Basic” Conservation Plan

A “basic: conservation plan will include:

1. an aerial photo or diagram of your fields;
2. a list of your management decisions;
3. the location of and schedule for applying new conservation practices;
4. a soil map and soil descriptions;
5. information sheets explaining how to carry out your specific management decisions;
6. a plan for operation and maintenance of practices, if needed.

“Complex” Conservation Plan

activities and required recordkeeping. Electronic copies of both the CNMP and the PAD shall remain in the possession of the producer/landowner to facilitate future revision(s).

C. Planners shall submit electronic files .AWM; .MMP; and .Doc (the State-adapted national template) to the reviewer.

D. The CNMP elements are represented in the national template as sections.

304.4 CNMP National Template

A. At a minimum, the following sections and format will be required in the template:

- (1) Cover and Signature Page:
 - (i) All required signatures for acceptance of a CNMP in the State.
 - (ii) Name of owner/operator.
 - (iii) Facility location (physical address) and mailing address.
 - (iv) Latitude and longitude of the production area entrance.
 - (v) Type and size of the AFO.
 - (vi) Plan period.
- (2) Section 1 – Background and Site Information:
 - (i) 1.1 General description of the operation.
 - (ii) 1.2 Sampling, calibration, and other statements.
 - (iii) 1.3 Natural Resource Concerns.
- (3) Section 2 – Manure and Wastewater Handling and Storage:
 - (i) 2.1 Map(s) of Production Area.
 - (ii) 2.2 Production Area Conservation Practices (Including air quality impact mitigation, if required).
 - (iii) 2.3 Manure Storage.
 - (iv) 2.4 Animal Inventory.
 - (v) 2.5 Normal Mortality Management.
 - (vi) 2.6 Planned Manure Exports off the Farm.
 - (vii) 2.7 Planned Manure Imports onto the Farm.
 - (viii) 2.8 Planned Internal Transfers of Manure.
- (4) Section 3 – Farmstead Safety and Security:
 - (i) 3.1 Emergency Response Plan.
 - (ii) 3.2 Biosecurity Measures, including Biosecurity Protocol for Farm Visitors and Disposal of Animal Veterinary Waste.
 - (iii) 3.3 Catastrophic Mortality Management.
 - (iv) 3.4 The EPA agreed-to Chemical Handling shall be included when the CNMP will be utilized for an NPDES permit.
- (5) Section 4 – Land Treatment Conservation Practices:
 - (i) 4.1 Map(s) of fields and conservation practices:
 - Aerial maps of land application areas.
 - Fields delineated with setbacks, buffers, waterways, conservation practices planned or other site-specific features important to nutrient management planning, (risers, inlets, wells, etc.).
 - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources.
 - Other site information or features of significance to nutrient management planning, such as property boundaries and occupied dwellings.
 - (ii) 4.2 Land Treatment Conservation Practices:
 - Land treatment conservation practices are planned and installed to the land treatment area and shall be in accordance with NRCS conservation practice standards. The objective of these practices is to prevent, minimize, or mitigate the impact of potential contaminants to water and air resources near agricultural fields.
 - MMP will automatically generate State-approved conservation practice narratives in the CNMP document. Design specifications information associated with planning and implementation of the conservation practices, job sheets, engineering plans, if essential, shall be placed in the customer's file to minimize the content of the CNMP. When job sheets are used, they must not conflict with information automatically generated by MMP and content must be agreed-to by State-based partners.
- (6) Section 5 – Soil and Risk Assessment Analyses:
 - (i) 5.1 Soil information.
 - (ii) 5.2 Predicted soil erosion.
 - (iii) 5.3 Nitrogen and phosphorus risk analyses.
 - (iv) 5.4 Additional field data required by risk assessment procedure(s).
- (7) Section 6 – Nutrient Management.

Meets the Nutrient Management Conservation Practice (Code 590):

- 6.1 Field information.
- 6.2 Manure application setback distances.

- 6.3 Soil test data.
- 6.4 Manure nutrient analysis.
- 6.5 Planned crops and fertilizer recommendations.
- 6.6 Manure application planning calendar.
- 6.7 Planned nutrient applications.
- 6.8 Field nutrient balance.
- 6.9 Manure inventory annual summary.
- 6.10 Fertilizer material annual summary.
- 6.11 Whole Farm nutrient balance.

(8) Section 7 – Feed Management

- (i) (Include only if a Feed Management Plan is required to reduce the total nutrients excreted by the livestock on the farm. Do not include discussions of optional feed management strategies.)
- (ii) When Feed Management conservation practice (code 592) is included in the CNMP, diets and feed management strategies shall be developed by professional animal scientists, independent professional nutritionists, or other comparably qualified individuals. When required by State policy or regulation, animal nutritionists shall be certified through any certification program recognized within the State.

(9) Section 8 – Other Utilization Options

Include only if utilization options other than land application are planned.

(10) Section 9 – Recordkeeping

Recordkeeping information is contained in the PAD for specific recordkeeping items, including tables and forms. Planners shall work with the producer and provide guidance regarding recordkeeping.

(11) Section 10 – References

- (i) 10.1 Publications.
- (ii) 10.2 Software and Data Sources, including pertinent version information.

B. CNMP Producer Activity Document (PAD) National Template

(1) A document shall be prepared to assist the producer in understanding and managing the CNMP. This document shall be readily available to the producer. The PAD national template below provides the basic format and content for a PAD. Typically, the PAD will not contain sufficient information for operations choosing to seek a permit.

(2) At a minimum, the following sections and format will be required in the template: (Specific sections in the PAD below refer to maps or tabular information.)

(i) Cover Page:

- Includes all required signatures for acceptance of a CNMP in the State.
- Name of Owner/Operator.
- Facility Location (physical address) and Mailing Address.
- Latitude and Longitude of the Production Area Entrance.
- Type and Size of the AFO.
- Plan period.

(ii) Section 1 – Background and Site Information. Background and Site Information is contained in the CNMP document.

(iii) Section 2 – Manure and Wastewater Handling and Storage

- 2.1. Map(s) of Production Area: sketch or aerial photo of the confinement areas, production buildings, manure storage and treatment locations, and feed storage areas.
- 2.2. Production Area Conservation Practices: documentation of the conservation practice decisions and O&M requirements.
- 2.6. Planned Manure Exports off the Farm.
- 2.7. Planned Manure Imports onto the Farm.
- 2.8. Planned Internal Transfers of Manure.

(iv) Section 3 – Farmstead Safety and Security

- 3.1 Emergency Response Plan (Sample).
- 3.2 Biosecurity measures, including biosecurity protocol for farm visitors and disposal of animal veterinary waste.
- 3.3 Catastrophic mortality management including State required procedures and contact information.

(v) Section 4 – Land Treatment Practices

- 4.1 Map(s) of Fields including land treatment conservation practices.
- 4.2 Land Treatment Practices: documentation of the conservation practice decisions and O&M requirements.

(vi) Section 5 – Soil and Risk Assessment Analyses

- Soil and Risk Assessment Analyses are contained in the CNMP document.
- (vii) Section 6 – Nutrient Management – Meets the Nutrient Management Conservation Practice (Code 590).

- 6.1 Field Information.
- 6.2 Manure application setback distances.

Reasons for Having a Conservation Plan

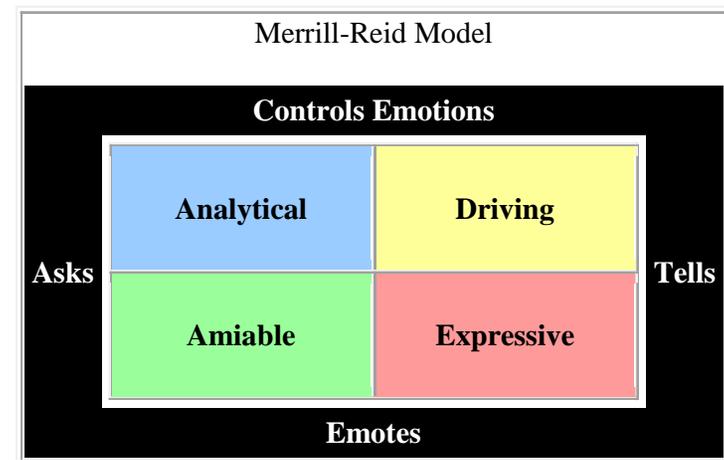
1. INTERNAL: I want one to better manage the natural resources on my farm so that it can be more
 - Productive
 - Profitable
 - Sustainable
 - Environmental
2. EXTERNAL: I need one to comply with regulatory requirements that I protect the environment on and off my farm
3. COMBO: I want one but, less than you are going to make me have.

Stating the Obvious

We are not all alike

- Personality Styles
- Beliefs
- Values
- Motivations
- Education
- Circumstances
- Etc.

Personality Styles



Plan Implementation is about Changing Behaviors

- “We” want cooperators to voluntarily accept, reject, modify or abandon a behavior for the benefit of individuals, groups or society as a whole.
- “Its not easy.”
 - Go out of their way
 - Spend more time
 - Spend more money
 - Contrary to their values

Principles for Influencing Behavioral Change (Nancy Lee & Philip Kotler)

1. Target cooperators most ready to act.
2. Promote single, simple, doable behaviors
3. Understand and overcome barriers.
4. Identify near term benefits.
5. Find a tangible object or service to include.
6. Look for a price that matters.
7. Make access easy.
8. Use effective message principles
9. Use credible messengers.
10. Choose effective communication channels.
11. Be customer-centric.

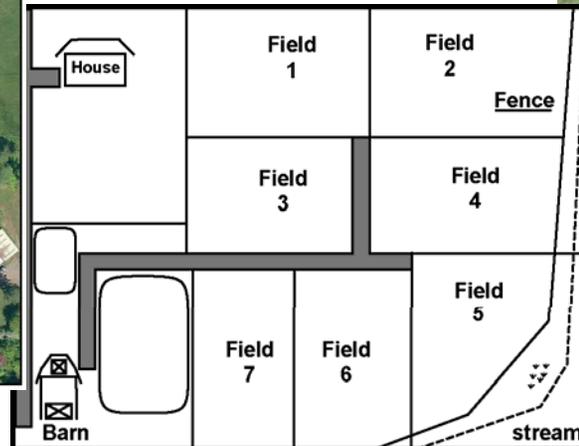
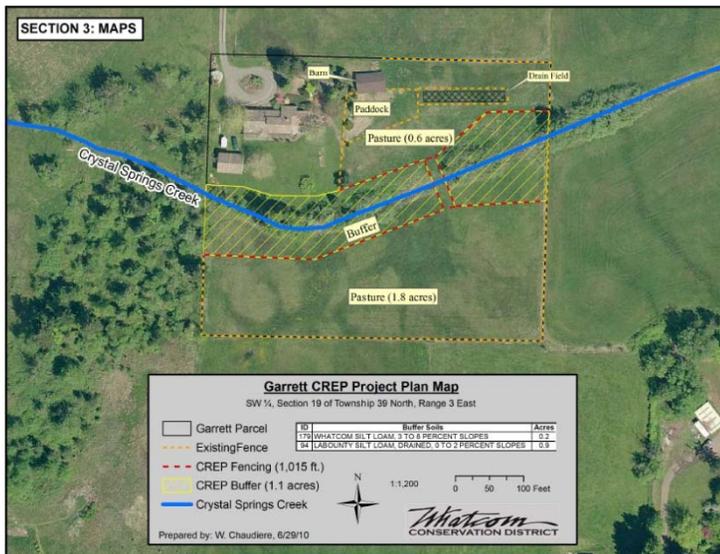
1. Target Cooperators Most Ready to Act.

- Greens
 - Have the value and the behavior.
 - “Just tell me what you want me to do next.”
- Sprouts
 - Have the value, but not the behavior.
 - “I really want to, but I just haven’t done anything about it.”
- Browns
 - Don’t have the value or the behavior.
 - “And I’m not likely to!”

2. Promoting Simple, Doable Behaviors

For Small Acreage Livestock Farms

- Pasture Management
- Manure Management
- Mud Management



3. Understand & Overcome Barriers

- Lack of Trust
 - 1st step to education
- Lack of Education
 - Problem recognition
 - Solution recognition
- Lack of Resources
 - Time
 - Money
 - Space
- Lack of Shared Perspective
 - Values & Behavior
- Non-regulatory
- Confidential
- No-cost TA
- Cost Share
- Unending Communication

4. Identify Near Term Benefits

Schneider Creek Fish Passage & Restoration

- Restored over 26,000' of high quality upstream rearing & spawning habitat previously isolated by floodgates.
 - Two new 5' side hinged & self regulating floodgates were installed in Schneider Creek to replace 2 top hinged cast iron floodgates that were a barrier to fish passage.



Schneider Creek before.....
improvements.



during.....



& after

- Fish habitat was enhanced & improved.
 - 22,855 trees & shrubs were planted along 9,800 linear feet.
- Field observations indicate that new self regulating gates stay open throughout the fall salmon migration season with the exception of a 2-3 day period of significant flooding. Monitoring indicates that native plants & shrubs have grown fast in their first growing season with a 95% survival rate.



5. Find a tangible object or service to include.

- Cost share Incentives



Dairy Manure/Bedding Separation System

Jeff Rainey of Coldstream Dairy is pleased with the manure/ bedding separation system he installed with state & federal cost-share & WCD technical assistance. It has helped them reduce solid manure applications & their bedding costs. **He said that this type of assistance is necessary to keep dairy producers in business**

6. Look for a price that matters

**Okay, one last time:
This is not a urinal.**



Get caught tossing a bottle of urine and you'll pay \$95.
Fines for littering range from \$95 to \$1,000. Remember, Washington
State Patrol has eyes out for violators. (Not to mention their noses).

**Litter and
it will hurt.**

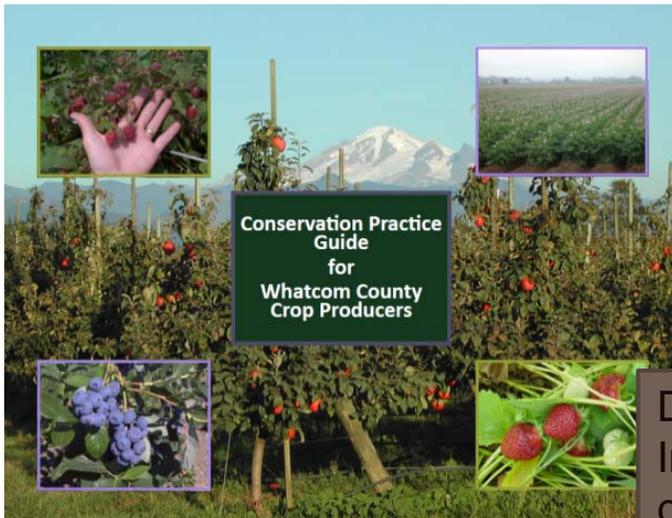
**REPORT VIOLATORS
866-LITTER-1**

7. Make access easy



Introduces recommended practices that livestock owners can use to minimize negative environmental impacts of their agricultural activities.

Drainage Management Guide for Whatcom County Drainage Improvement Districts



DRAFT Conservation Practice Guide for Moderate Impact Agricultural Operations. Provides guidance on conservation practices needed to protect critical areas

Making Complex Matters Simpler

DAIRY NUTRIENT MANAGEMENT PLAN

NUTRIENT MANAGEMENT PRACTICES

6. NUTRIENT MANAGEMENT PRACTICES

The following section provides details of your nutrient management plan and each of the practices to be applied on your farm to carry it out. Each nutrient practice specification has details on how to apply and maintain the practice for optimal performance.

NUTRIENT MANAGEMENT AND LAND APPLICATION CONSERVATION PRACTICES

You have chosen the following nutrient management conservation practices to be applied on your farm: Nutrient Management (590), Application Risk Management (ARM) System, and Irrigation Water Management (449). These practices will be continued and/or applied in 2009 at the approval of this Plan update. These practices have been chosen to better manage and utilize available nutrients, while also minimizing the environmental impact to air, water, and land resources.

For all areas of the farm, the Nutrient Management (590) specifications will be followed to maximize nutrient utilization and minimize pollution of resources. The Application Risk Management (ARM) program was chosen to allow better control and flexibility of application of manure to fields. This program allows user defined and monitored manure application during high risk seasons (October – April) as opposed to the current fixed date and T-Sum 200 methods of application. This system will be thoroughly monitored by WCD during the first years of practice.

NUTRIENT PRACTICE SUMMARY POINTS

Nutrient Management (NRCS 590):

- Application of manure should be at agronomic rates (match nutrient application with plant needs) and not exceed crop nitrogen needs. Follow soil testing protocols and adjust application rates according to yield.
- It is recommended that you test manure prior to application on any field to ensure agronomic application.
- Minimize runoff of manure with proper application rates, buffers/cover crops, and manure setbacks.
- Manure setback distances: April 15-Aug 31 = 10 feet; Sept 1-April 14 = width of filter strip; Winter (Nov 1-Feb 29) = 2x width of filter strip. **Big gun setback is always at least 35 feet (or the width of your setback distance, whichever is greater) from the ditch at all times.**
- Where appropriate (i.e., corn fields), inject or incorporate manure within 48 hours to reduce atmospheric nitrogen and odor losses.
- Apply manure during times of low temperature and wind speed and consider wind direction when applying.
- When applicable, manure import and export records need to be maintained.

ARM System:

- Only apply manure to medium and low risk fields in the winter months.
- Fill out the risk management worksheet for EVERY field prior to ALL manure applications to determine if application is appropriate. Follow all guidelines and recommendations posted on the worksheet.
- Do not apply manure to ground that is frozen, has standing water, where the soil moisture is >90%, and/or the water table is <12 inches from the surface.
- Consult the 5 day weather forecast prior to applying manure. If more than 0.25 inches of rain is expected at any one time, do not apply.



DAIRY NUTRIENT MANAGEMENT PLAN

NUTRIENT MANAGEMENT PRACTICES

Application Risk Management Worksheet Example

Below is an example of a completed ARM Worksheet. The worksheet shows the type of information entered in the spreadsheet and some recommendations and risk levels you may see.

Criteria	Answers	Risk Warning
Forecast (click HERE for helpful weather links)		
Rain in last two days? (Yes or No)	No	Criteria Acceptable: Continue Analysis
Quantity (total cumulative inches)	0	
Rain predicted on day of application? (Yes or No)	Yes	Caution: Be sure to only apply at recommended rates based on soil water holding capacity.
Click HERE for predicted precip amounts		
Quantity (total cumulative inches)	0.08	Criteria Acceptable: A small amount of rain can actually help to incorporate manure into the top layer of soil in the 72 hours following application.
Rain predicted in next 3 days? (Yes or No)	Yes	Caution: Be sure to only apply at recommended rates based on soil water holding capacity.
Click HERE for predicted precip amounts		
Quantity (total cumulative inches)	0.12	Caution: If rain is expected in one event, limit manure application. Otherwise pay extreme caution.
Water Table (click HERE for info on determining your water table depth)		
Depth to water (inches)	26	Criteria Acceptable: Continue Analysis
Soil Moisture/ Available Water Holding Capacity (click HERE for info on determining soil moisture)		
Soil Moisture (%)	85	Caution: You may be at risk for runoff. Check field conditions and the forecast, and apply only at or below recommended rates.
Field Surface Condition		
Pending (Yes or No)	No	Criteria Acceptable: Continue Analysis
Flooding (Yes or No)	No	Criteria Acceptable: Continue Analysis
Frozen or snow covered ground (Yes or No)	No	Criteria Acceptable: Continue Analysis
Tiles present (Yes or No)	Yes	Caution: Tiles must have at least 24 inches of cover, not be discharging, and their location must be known prior to application. Monitor tiles closely after application. If manure discharges from tile, plug immediately.
Field Vegetation Cover (grass or cover/relay crop)		
Quality/density of cover (%)	85	Cover is dense. Criteria Acceptable: Continue Analysis
Height of Cover (inches)	4	Caution: Make sure vegetation is dense and able to properly filter runoff
Application Equipment		
Injector/aerator type (Yes or No)	Yes	Method Acceptable: Continue Analysis
Splash plate type (Yes or No)	No	
Irrigation Sprinkler (Big Gun) (Yes or No)	Yes	Caution: While this method decreases compaction issues, it may increase the likelihood of runoff of manure from the surface of your field.
Vegetative Treatment and Setbacks (FILL OUT ONLY IF THERE IS WATER ADJACENT TO YOUR FIELD)		
Vegetative border (filter strip) width (feet)	35	Criteria Acceptable: Continue Analysis
Vegetative border (filter strip) grass height (inch)	5	Caution: Make sure vegetation is dense and able to properly filter runoff
Density of vegetation (%)	90	Criteria Acceptable: Continue Analysis
Manure setback distance (feet)	65	Caution: Manure setbacks for winter application are recommended to be twice that of your filter strip width or as specified in your plan.
Application Risk Analysis: (If "N/A" appears in this field, go back and make sure ALL parameters are filled out including Soil Type at top of sheet)	MEDIUM-HIGH RISK	You may apply manure, but do so with caution. Follow all recommendations, manure setback distances, and application guidelines in this worksheet and in your Plan.
Maximum Recommended Application Rate:	6,500	gal/acre

9. Choose Credible Messengers

Whatcom Conservation District



State Legislative District #39, 40, 42
Congressional District #2



Back row: Chuck Timblin, George Boggs, Chris Clark, Frank Corey, Beth Chisholm
Front row: Wayne Chaudiere, Sonya Schaller, Dawn Bekenyi, Nichole Embertson, Andrew Phay



District of the Year Award

Whatcom Conservation District year in review

- ✓ 62 Farm Conservation Plans developed
- ✓ 11 Dairy Nutrient Management Plans completed/updated
- ✓ \$196,149 in State Livestock Cost-share
- ✓ 1,420 cooperators received technical assistance
- ✓ 245 Small Farm Workshops participants
- ✓ \$7,026 provided in costshare to non-commercial farms
- ✓ 21 CREP Plans completed
- ✓ 114 CREP projects maintained
- ✓ 669 CREP acres maintained
- ✓ 15 Special riparian restoration projects implemented
- ✓ 4,656 ft. of stream fenced
- ✓ 63,207 ft. of stream planted
- ✓ 54,467 Native plants installed

Whatcom recognized for leadership and effectiveness in 2009

In 2009, Whatcom Conservation District was recognized with several awards.

- Conservation District of the Year
- Manager of the Year- George Boggs
- Special service award- Frank Corey
- A nationally published article highlighting the District's work in the Nooksack Basin.

Many years of leadership and cooperative assistance to landowners throughout Whatcom County has resulted in improved water quality in the Nooksack Basin. Special recognition goes to all our partners, farmers, producers, and landowners who made this year a huge success!

Other Accomplishments

- Individuals provided technical assistance: 1,480
- Workshops: 260
- Conservation Plans: 71
- Nutrient Management Plans completed/updated: 26
- Stock Cost-share of was provided with reducer match.
- Commercial farm cost-share: 1,501 was provided
- Landowner match.
- Management (BMPs) cost-shared: 8
- Acres completed: 26
- Acres planted: 26

Acres fenced: 8

Acres planted: 26

Acres maintained: 112

Acres maintained: 642

Riparian restoration implemented: 8

Acres planted: 22,290

Acres installed: 19,228

2010 Feature Accomplishments

Farm Planning Program -

Resource Challenge Whatcom County is ranked 7th overall in agriculture products sold in the state with rankings of 2nd in dairy products and 1st in berry production. Whatcom has 126 dairy farms with an estimated 49,000 cows, not counting heifer replacement facilities, and 11,379 acres in berries. In addition to dairies and berries, Whatcom County has other valuable agriculture commodities as well as a large rural community which has over 1,000 livestock operations. This extensive agricultural community provides both benefits and challenges to water quality and can have an impact on local commercial and recreational shellfish harvest areas and ground water.



Coldstream Dairy Separation System



Project Summary and Results – Whatcom Conservation District (WCD) has two farm planning teams. One team works with commercial livestock operations (primarily dairy farms). The other works with crop and non-profit livestock operations.

In fiscal year 2010, \$437,697 State funds (\$119,983 Livestock Technical Assistance, \$149,900 Livestock Cost-share, and \$51,997 Technical Service Provider, \$115,817 Small Farm Technical Assistance) were matched by \$645,727 Federal funds (\$51,997 Technical Service Provider and \$593,730 EQIP cost-share), \$131,579 County Funds and \$5,000 of Puget Sound Partnership funds. Eleven producers have implemented 27 practices under EQIP, which include separators, pipelines, pumps, manure pits & tanks.

Coldstream Dairy received State and EQIP cost-share and technical assistance on a manure/bedding separation system. Jeff Rainey stated that the system helped reduce their solids applications and their bedding costs. He said that this type of assistance is necessary to keep dairy producers in business. They've had a very positive experience with their unit and working with Chris Clark, WCD EIT.

Key Project Partners – USDA Natural Resources Conservation Service Washington State Conservation Commission, Whatcom County and Puget Sound Partnership.

Contact Information

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Board of Supervisors:

Joseph Heller, Chair
Terry Lenssen, Vice-Chair
Larry Davis, Secretary/Treasurer
Ed Stone, Member
Richard Yoder, Member

Cost-share assistance on separation systems helps recycle bedding and reduce amount of solids in the waste system.

More Work To Do

Conservation Reserve Enhancement Program (CREP)

- 26 CREP participants for the upcoming year with 37 new projects pending

EPA Grants

- Received EPA grant (\$772,570) to assist landowners and residents of Birch Bay to improve water quality for recreational swimming and shellfish harvest.
- Received EPA grant (\$710,887) to develop and scientifically test a unique Application Risk Management (ARM) system to reduce the impacts of manure spreading.

Livestock

- Ongoing work with 126 commercial dairy operations. 85

10. Choose Effective Communication Channels

- **Workshops**

- Small Farm Expo – vendors, demonstrations, information booths organized by District
- Llama & Alpaca Information Day at N. & J. Kuklenski farm.
- Agriculture & Wetlands, Society for Wetland Scientists at Anderson & Hollinsworth farms.
- Horses for Clean Water

- **Presentations**

- Cattlemen’s Meeting, subject: C-PAL
- Ag Advisory Committee (2)
- Mt. Baker HS FFA, subject: C-PAL
- Whatcom Chapter Back Country Horseman



- **Tours**

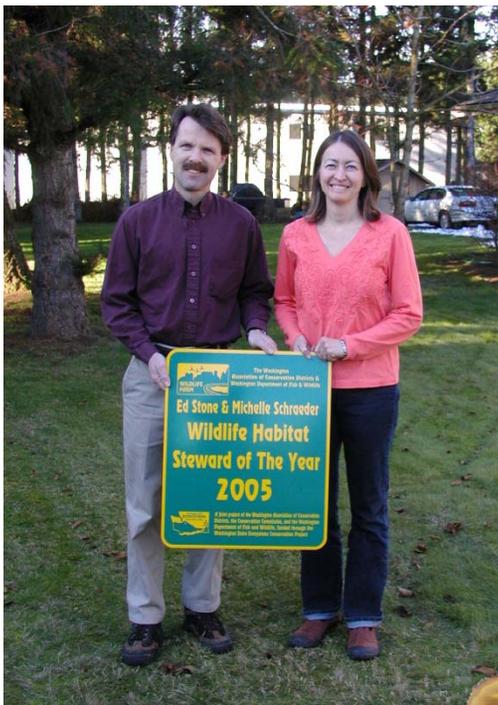
- C-PAL Farm Tour by P&DS; Shelton & Hrutfiord farms
- WWU Agro-Ecology class at Eldridge & Henry farms
- Pasture Walks at Hrutfiord, Chudek & Daugert farms

- **Booths**

- Home Show - District programs including C-PAL
- 4H Youth Fair



11. Be Customer-centric.





Thank you!

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