

***FIELD STEWARDS
OPERATIONS MANUAL***

A CORPORATE SUPPLY CHAIN SUSTAINABILITY PROGRAM

VERSION 3

DECEMBER 6, 2019



CONSERVATION MARKETPLACE MIDWEST

1243 LAKE AVENUE, SUITE 777
FAIRMONT, MN 56031

Field Stewards Corporate Supply Chain Sustainability Program

Operations Manual



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Conservation Innovation Grant**



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The McKNIGHT Foundation



About the Field Stewards Development Team

The Field Stewards development team was comprised of many different conservation professionals, corporation professionals and funders who are interested in an advancing the use of environmental market-based payments in corporate supply chain sustainability programs. Each entity in the team had previously worked with one or more of the members on the final development team on projects to advance market-based conservation efforts. However, the Field Stewards concept of financially and socially recognizing agricultural conservation leaders, good stewards, was a dominant factor that drew the development team together.

Entity	Lead	About
<p>Conservation Marketplace Midwest Field Stewards Role: NRCS CIG Grant Administrator</p>	<p>Brian Brandt, Chair</p>	<p>Conservation Marketplace Midwest (CMM), a 501(c)(3) non-profit organization, was created in 2008 by conservation professionals as an innovative approach to help meet water quality goals in watersheds across southern and central Minnesota. The straightforward process advances conservation adoption to help restore ecological function of our environment.</p>
		
<p>Environmental Initiative Field Stewards Role: Administrative Office</p>	<p>Greg Bohrer, Director Agriculture Program</p>	<p>Environmental Initiative addresses environmental challenges collaboratively. We've helped organizations design events and conversations, arranged environmental stakeholder input or decision-making processes and managed complex projects.</p>
		
<p>GNP Company; <i>Company No Longer Exists Due to an Acquisition</i> Field Stewards Role: Corporate Advisor and Pilot Test Purchaser of Certificates</p>	<p>Paul Helgeson Sustainability Manager <i>(formerly GNP Co.)</i></p>	<p>Former Sustainability Manager, promoter of being a “Strong First” and developing the Field Stewards efforts for the supply chain sustainability programs supporting GNP Company’s premium brand of meat, Just Bare®</p>
		

Entity	Lead	About
<p>Minnesota Department of Agriculture</p>	<p>Brad Redlin Program Manager, Minnesota Agricultural Water Quality Certification Program</p>	<p>The Minnesota Department of Agriculture’s mission is to enhance Minnesotan’s quality of life by ensuring the integrity of our food supply, the health of our environment and strength of our agricultural economy.</p>
 <p>DEPARTMENT OF AGRICULTURE</p>		
<p>Stearns County, MN Soil & Water Conservation District Field Stewards Role: Trained Aggregators</p>	<p>Dennis Fuchs, Administrator Stearns County Soil & Water Conservation District</p>	<p>Mission Statement: To enhance the soil, water, and natural resources necessary for productive and profitable agriculture; safe and affordable drinking water; and wildlife habitat for all Stearns County residents, businesses, and visitors.</p>
		
<p>TBL Consultants, LLC Field Stewards Role: Technical Support</p>	<p>Jim Klang, Principle Engineer</p>	<p>TBL Consultants, LLC pursues projects that benefit the client, their community and their environment. The firm brings over 30-years of watershed management and over 25-years of environmental market experience to their project teams.</p>
 <p>TBL Consultants, LLC Clients, Community, and Environment</p>		<p><i>Project Initiated While Working for:</i> KIESER & ASSOCIATES ENVIRONMENTAL SCIENCE & ENGINEERING</p>

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FIELD STEWARDS

BACKGROUND

Field Stewards facilitates a farmer-company partnership that protects water quality (WQ) in a company’s own backyard and minimization of GHG emissions, while simultaneously furthering their business goals. It is a simple, low-cost program that takes steps to protect your supply chain, local community and reputation. Field Stewards crop farmers maintain a high level of environmental protection on their farms, and food companies reward them for conservation leadership. Through this relationship, food companies invest in clean water, local economies and the voluntary adoption of environmental practices on farms. In this way companies get recognition and credit for promoting clean water, (GHG) minimization and conservation leadership, without having to reach down a complicated and untraceable supply chain.

Because many meat processing and food ingredient industries do not have a direct connection with the grain growers, Field Stewards created a way to provide a certification program for these corporations to demonstrate environmental responsibility for a critical component of their supply chain. The lack of a direct connection with the grain growers is due to how the value chain for industries has evolved in the United States. According to a Ceres (Ceres, 2014) report entitled Water & Climate Risks Facing U.S. Corn Production there are 16 industries in the corn value chain. Figure 1, is information provided by a figure in the Ceres report that illustrates the industries involved in the corn value chain. It lists types of industries and possible pathways from the field to the retail markets. Another six industry types (not shown) provide growers crop inputs, crop protection, equipment, financing and technical services.

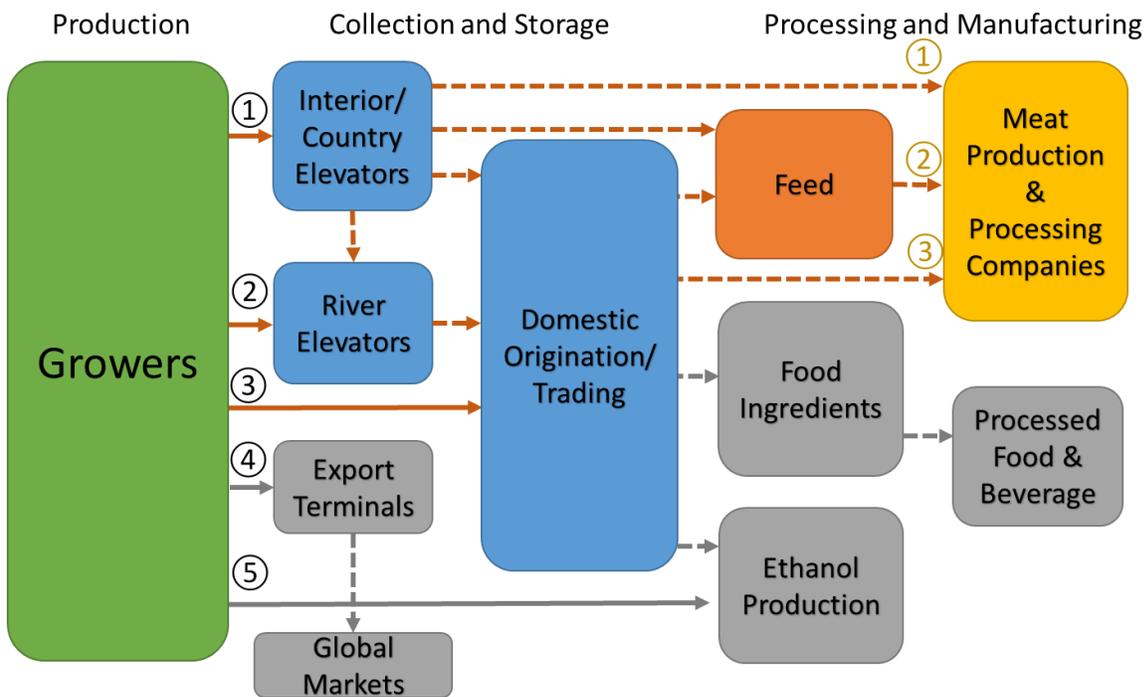


FIGURE 1, THE U.S. CORN VALUE CHAIN, A SUBSET OF THE CERES (2014) REPORT'S LIST AND FLOW PATH OF HOW DIFFERENT TYPES OF INDUSTRIES ARE INVOLVED FROM CORN PRODUCTION THROUGH TO RETAIL PROVIDERS.

Figure 1 illustrates the dilemma facing supply chain sustainability programs for food processors that buy grain commodities from the current commodities markets. As depicted, the corn value chain setup offers multiple sales decision options to the growers, most to middlemen industries. Industries in the middle

consist of collection, storage and livestock feed processing companies who operate between the growers and meat, food and beverage production and processing industries. The gray highlighted pathways are other industries purchasing grain in competition with meat processors. After a farmer sells their harvest to a grain elevator, the grain from one farm is blended with grain from many farms. Because the elevator sells grain to many buyers, the grain is randomly divided up by lots before being shipped to different locations. In summary, Figure 2 illustrates two important barriers for supply chain influence for meat production and processing companies that do not directly contract with growers:

1. Growers have five (5) main selling options for their corn, while these companies only have three (3) main purchasing options.
2. There are many handling decisions and outcomes made outside of the farm's and buyer's control

Therefore, U.S. grain buyers interested in supply chain programs face the dilemma of not being able to track where their commodities came from. Providing an environmental responsibility tracking program for corn and soybean supplies is made even more complex due to the privileged status corn and soybeans have amongst all crops grown in United States. Corn is the number one cash crop and soybeans is number two for all sales in the U.S. In 2017 Corn receipts were \$45.8 Billion, and Soybeans were \$38.6 Billion. Furthermore, the top five corn and soybean producing states (i.e., Iowa, Illinois, Minnesota, Indiana and Nebraska) account for 61 percent of the corn grown and 50 percent of the soybeans grown. Therefore, this wide distribution of farm locations adds to the complexity and frustration for food processors trying to create a valid sustainability program for responsible management of WQ and GHG emissions among their grain suppliers. The Field Stewards program is a pathway to address these issues. Field Stewards also provides a method to reward farmers in a location of the company choosing.

LACK OF CONTROL, BUT HELD RESPONSIBLE

Food companies generally recognize that, though they do not directly control the farming used to supply agricultural commodities in their products, this stage of their supply chain is responsible for the bulk of the environmental impact associated with their products. Thus, whether they have control or not, they will still be responsible by consumers and activists for this impact.

Designed in collaboration with local natural resource agencies, environmental non-profits, and Consumer Packaged Goods (CPG) companies, the Field Stewards program is designed to help these companies address WQ and GHG excessive emission risks on farms associated with their supply grains – allowing them to demonstrate alignment with the environmental values of their consumers, improve the resiliency of their commodity crop sourcing regions, and preserve the value of their brand identities. By recognizing it is not necessary to have a chain of custody method to realize environmental outcomes a larger cost outlay is avoided. Instead, focusing on the company's selected certificate sourcing region helps limit tracking costs and can focus more resources on the environment.

Figure 2 presents how the Field Stewards program acknowledges two different commodity products. The traditional grain commodity is the pathway across the top of the figure. The second pathway in the lower half of the figure, is the purchase of sustainable grain certificates from farmers who have taken the steps to manage their farm in an environmentally conscience manner and undergo the third party audit that is the basis for awarding the Field Stewards title and right to sell certificates.

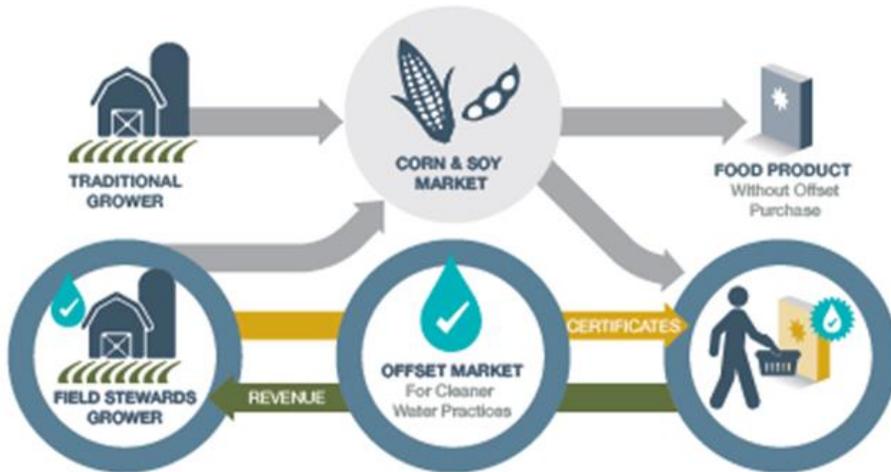


FIGURE 2, FIELD STEWARDS CREATES A SECOND COMMODITY MARKET FOR SUSTAINABLE CERTIFICATES FROM FARMERS WHO HAVE TAKEN THE STEPS TO MANAGE THEIR FARM IN AN ENVIRONMENTALLY CONSCIENCE MANNER AND UNDERGO A THIRD PARTY AUDITS TO AWARD THE FIELD STEWARDS TITLES.

It is important to recognize that Field Stewards provides an offset certificate that exists because the grain used in food production *may* have come from a site that impacted WQ and/or GHG emissions. In addition, many farmers who are not in the Field Stewards program operate their farm in a manner that meets the Field Stewards standard; these farms only have to request the third party audit process and submit their application.

THE FIELD STEWARDS ORGANIZATIONAL STRUCTURE

PARTICIPANT TITLES AND RESPONSIBILITIES

The Field Stewards program separates responsibilities among five categories of program participants to provide a publicly transparent certification process that is supported by the necessary checks and balances to be verifiable.

Administrator (Environmental Initiative): The Field Stewards Administrator is the central hub of the program and has many responsibilities to run the program. Administrator responsibilities provide oversight and program management for all four of the other participating entities. The conflict resolution process is also managed by the Administrator; with support assistance from program participants who were previously not involved with the site experiences a conflict. A list of daily tasks also includes, but are not limited to:

- Maintain farm evaluations, certifications and continued compliance summaries
- Marketing to, and contracting with corporate supply chain certificate buyers
- Acts as the linkage between buyer and farmer
- Manage a registry that organizes eligible and previously contracted farms for the program
- Enter into payment and responsibility contracts with farms
- Overseeing program representative training
- Registration and tracking of certified fields status
- Fiscal management and payment schedules for enrolled farmers
- Public dissemination of program information and progress status reporting

Agricultural Producer/Farmer/Grower (including EQIP eligible farmers): The operator of the cropped fields for the entire farm. This entity has full authority to sign and contractually obligate the farm management responsibilities. The responsibilities include maintaining the certificate's agreed upon operating system that was in place during the program evaluation, or notifying the Field Stewards representatives regarding changes for a reevaluation.

Aggregator (Stearns County Soil & Water Conservation District): An Aggregator is a professional farm service provider or agricultural conservation technician that is knowledgeable about a wide array of farm operation techniques and needs. An aggregator has a pre-established working relationship with the farmer and understands the farm. The Aggregator can also assist with possible changes to a variety of other agricultural crop production/conservation Best Management Practices (BMPs). The Aggregator is trained to evaluate the program protocols and Runoff Water Quality Index for agriculture (WQI_{ag}).

Corporate Buyer: Field Stewards is focused on CPG processing companies that purchase certificates as part of their overall supply chain sustainability program. Field Stewards certificates are for crop commodity source impacts specifically related to the crop production's WQ and GHG environmental responsibility efforts. The Field Steward's expected buyers are CPG companies working with animal feed used in meat production, and processing operations. This program also serves grain, fruit or vegetable commodity supply chains sustainability programs for food and beverage processing companies.

Third Party Verifier (Minnesota Department of Agriculture Program Specialists were used during the pilot project): A Third Party Verifier has the same training and skill sets required as an

Aggregator. The verifier focus is on providing a review of evaluations, and provides the Administrator a summary record of the Farmer's and Aggregator's review. In addition, the Administrator assigns a Third Party Verifier to conduct periodic audits of the farm operations and oversee any certificate restoration processes of a discovered site deficiency. The farm audit reviews have access to the Aggregator file folders and WQIag evaluations checking for repeatability of WQIag values. The main role of a Third Party Verifier is to provide an agricultural professional to farms in order to fulfill the Field Stewards program's checks and balance evaluations.

[The Third Party Verifier does not copy or remove files from the Aggregator's possession. Third Party Verifier forms are summary forms of the review findings and do not include farm or farmer detailed information (unless legally required to resolve contractual disputes). Verifier's reports are submitted using a unique identification number the program assigns to the farm.]

PUBLIC TRANSPARENCY AND FARMER CONFIDENTIALITY PROTOCOLS

Field Stewards provides companies a verified certificate-based sustainability program service for their crop commodity supply chain. Part of the certification service is to foster public trust and program accountability. As such, the public has a right to understand the program's certification metrics, operational checks and balances, and record keeping that are used to complete and maintain a supply of certified crop acres.

The program is based on voluntary participation by growers. The voluntary participation switches to a contractual obligation when certificate sales contract is signed. As part of the program commitment, participating farmers agreed to allow two types of Field Stewards representatives on their farm; the Aggregator and Third Party Reviewer. The program representatives evaluate their field operation systems, conduct visual inspections, and request nutrient management plans and records for each field. The certification threshold for field operations is not easily achieved, and a rigorous process is used during evaluations. Evaluation steps review tillage, nutrient, pesticide, irrigation and drainage management, as well as understanding the installation and operation of WQ BMPs that are considered a necessary condition of the field meeting the threshold score. Because the Field Stewards program provides a second evaluation, using the redundancy to verify program repeatability, the program provides a level of operation privacy that is appreciated by the farmers. Likewise, the redundant program protocols and summarized program public reporting is structured to provide the concerned public reports and a means to observe protocols, ask questions to develop a rich understanding the program; building comfort and trust in the certificate award process.

This type of checks and balances written into the program protocols and public reporting mechanisms are a critical component that is required to maintain an adequate supply of certificates for buyers. A highlight of the policies and protocols included in program operation are that:

- Only the Aggregator office keeps the detailed farm evaluation information and records.
- The Aggregator allows the Administrator's assigned Third Party Verifier full access to the farm files during verification inspections for application review, program audits and site deficiency resolution purposes.
- The Aggregator and Third Party Verifier complete administration submittal forms for each farm, summarizing the results of each evaluation for the Administrator; the summary forms do not contain detailed farm data.
- The Administrator is only provided the Farmer name, contact information and evaluation results in order to administrate the program registry, contracting and oversee the Aggregator and Third Party Verifier assignments.

- Public reporting includes the multiple farm summaries aggregated and reported out by county. [Example reported county details include the cropped acre totals certified, the acre conversion into harvest units (e.g., bushels or tons), and the average of the WQIag field scores.]
- The Administrator must request, and receive written permission from a farmer before names or more personal information farm descriptions can be released to the public for marketing, buyer or program promotion.

This balance between public transparency and farm privacy was created to minimize the potential for limited farmer participation. The program development team's concern and decisions surrounding the farmer participation and privacy issues are based on the team's long history of working with farmers. During their collective experiences, many conversations with farmers have resulted in developing an understanding of farmer perceptions about the varying ways an individual may have concern about their industry being misinterpreted or misrepresented. To be sensitive to these concerns and still provide a totally transparent approach, is challenging. The program delivery methods must minimize the chance of an overly aggressive public information process becoming a nonstarter for farmers. Farmers have spoken into wanting to avoid having to engage in one or more of the following situations:

- Having to personally address concerns from non-agricultural savvy entities who have misinterpreted the farm industry process documented as the farm condition(s)
- Having to debate with individuals who hold an unrealistic expectation of what a farm conservation level can pragmatically or affordably achieve
- Facing the possibility of non-Field Steward program entities (concerned parties) dropping in for an uninvited farm inspection
- Having difficult discussions with their friends and peers, because another organization has held them up to the public as a Field Steward, a conservation leader; this type of label can sometimes be taken by their peers as "that farmer is arrogant and prideful."

Again, not every farmer is concerned about these issues, and an individual may only be concerned about one or a couple of these concerns. However, the Field Stewards process addresses these concerns to maximize future participation by farmers in the program, while still providing a thoughtful and judicious public reporting process.

FIELD STEWARDS REPRESENTATIVES & ORGANIZATION CHART

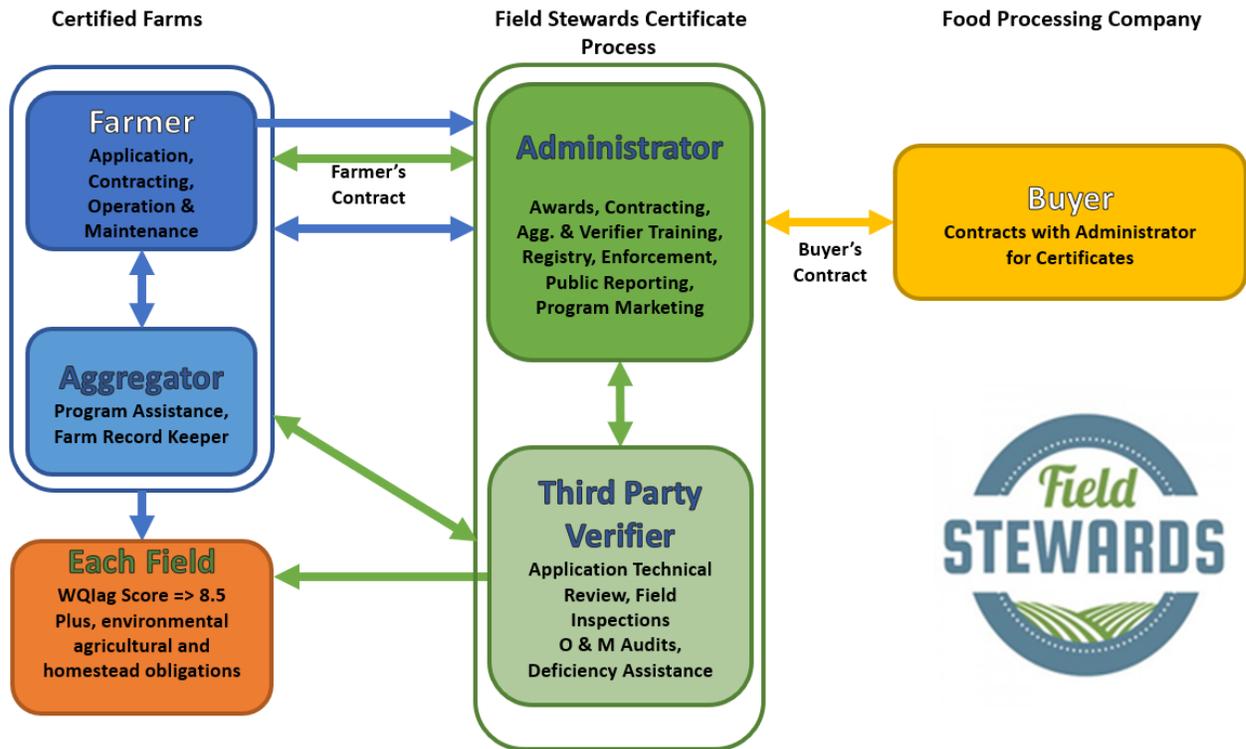


FIGURE 3, FIELD STEWARDS ORGANIZATION CHART DEPICTING ROLES, REPORTING HIERARCHY (BLUE AND GREEN OUTLINE BOXES), WHO IS A TRAINED FIELD STEWARD REPRESENTATIVE (TITLES IN BLUE), AND WORKING LINKAGES (ARROWS)

The program Administrator contracts with the buyers and farmers for program certificates. The Administrator also contracts with Aggregators and Third Party Verifiers for program service fees. Not depicted in Figure 3, is that the Administrator is responsible entity required to provide training and performance status evaluations for both the Aggregator and Third Party Verifier; which is necessary for them to be an authorized program representative. The Administrator has the right to remove their authorization if an individual's performance is not maintained in good standing. This structure of roles, policies and good record keeping are what Field Stewards depends on to build public trust.

When performing day-to-day tasks, the Aggregator's assistance is focused on the farmer's needs, and must truthfully represent the farmer as his advisor and advocate. Inversely, the Third Party Verifier is the Administrator's program technical advisor for the farm evaluations, providing professional guidance to the Administrator regarding completeness, accuracy and deficiency issues. All three program representative categories sign program confidentiality agreements to protect farm information and advance conservation in even difficult settings.

WORKING WITH THE FARMERS

FIELD STEWARDS & THE MINNESOTA AGRICULTURAL WATER QUALITY CERTIFICATION PROGRAM

The Field Stewards program collaborates with the MAWQCP which is operated by the Minnesota Department of Agriculture (MDA). The collaboration provides both programs many benefits. Besides being able to increase participation in both program by offering farmers two different incentives, consisting of the Field Stewards certificate payments and the MAWQCP providing 10-years deemed to be in compliance with any new water quality rules or laws. The MDA program also brings conservation funding and an enhanced, calibrated and web available WQIag tool which includes supporting training materials. The two programs remain independent but share their resources and opportunities when the farmer participates in both programs. Figure 4 is an organization chart illustrating how the two program’s collaboration provides enhanced benefits to participating farmers.



FIGURE 4, THE MINNESOTA DEPARTMENT OF AGRICULTURE (MDA) OPERATES A MINNESOTA AGRICULTURAL WATER QUALITY CERTIFICATION PROGRAM (MAWQCP) AND ASSOCIATED NRCS REGIONAL CONSERVATION PARTNERSHIP PROGRAM THAT UTILIZES THE SAME CERTIFICATION THRESHOLD AND ASSESSMENT TOOL AS THE FIELD STEWARDS PROGRAM. THE COLLABORATION BY BOTH PROGRAMS OFFERS CERTIFIED FARMERS A 10-YEAR NEW REGULATION BY UNDER THE MAWQCP AND CERTIFICATION PAYMENTS PER ACRE UNDER FIELD STEWARDS. FOR FARM OPERATIONS THAT ARE NOT ACHIEVING THE THRESHOLD SCORE, BUT CLOSE THE MDA OFFERS A FUNDING OPPORTUNITY FOR ADDITIONAL BMP IMPLEMENTATION UNDER THE MDA ADMINISTERED NRCS REGIONAL CONSERVATION PARTNERSHIP PROGRAM.

The MDA has created an online interface for the Minnesota WQIag tool which is complete with instructions. The original NRCS national WQIag tool has been modified twice to improve the fit of the index with the Minnesota farm operation conditions. Minnesota’s northern climate and semi humid conditions has contributed to farms depending on drainage enhancements and livestock operations which influence nutrient management recommendations and treatment efficiencies of BMPs. The updated WQIag tool can be found on line at: <https://mnwatercertify.mda.state.mn.us/wqcpapp/>.

The web interface provides a step by step data entry process. Once trained on the WQIag steps an Aggregator can either enter existing shape files or map the field online in the tool, as illustrated by an example illustrating three of the eight categories necessary to complete the WQIag in Figures 5, 6 and 7. The online process automatically loads the fields location, size and soil information into the WQIag for the operator. The farmer working with the Aggregator provide the list of information to complete the data input steps as explained in Appendix A: Runoff Water Quality Index for agriculture.

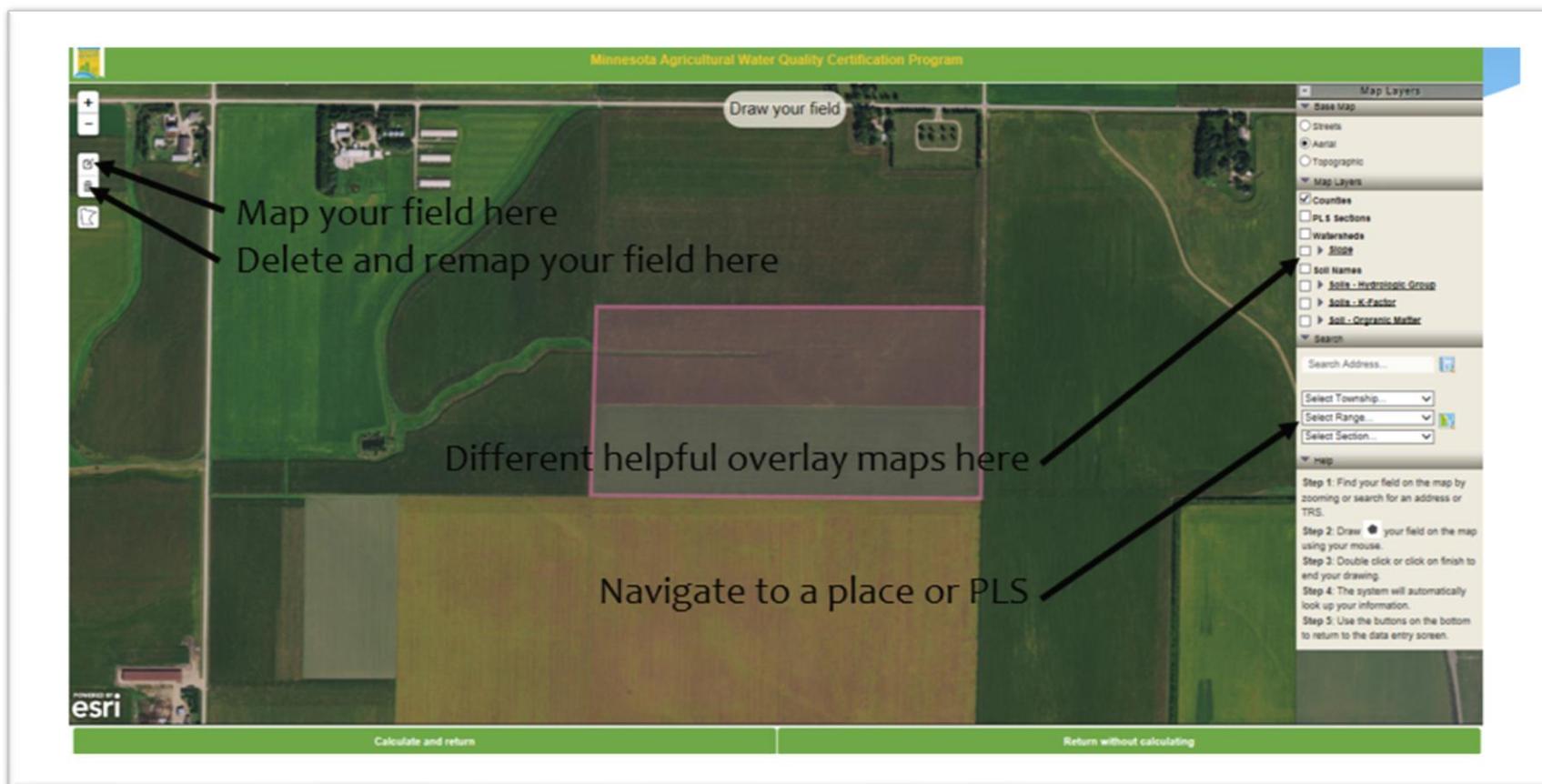


FIGURE 5, RUNOFF WATER QUALITY INDEX FOR AGRICULTURE WEB INTERFACE BASED FIELD MAPPING OPTION FOR ESTABLISHING FIELD LOCATION, SOIL DATA AND SIZE (MDA, MAWQCP)

Minnesota Agricultural Water Quality Certification Program

Apply Practices to Other Fields

Export Practices

Chose all practices that apply to the field, if a practices is not applicable it will not be used in the risk score calculation. You must have all selections checked in order for the calculator to work.

Select Standard BMPs for Rate

Account for previous crop N credits, manure N credits, starter, weed and feed program and contributions from phosphorus fertilizers, such as MAP and DAP

Yes No N/A

Use a soil nitrate test when appropriate to a depth of 24 inches. Collect fall soil samples after soil temperatures at 6 inches stabilizes below 50 degrees F.

Yes No N/A

If field-average soil samples are collected, the sample represents less than 20 acres.

Yes No N/A

Select an appropriate N fertilizer rate within the University of Minnesota recommendations, including supplemental N worksheet OR On-farm trials ⓘ

Yes No N/A

Select Advanced BMPs for Rate

Select Standard BMPs for Source, Timing and Placement

Calculate and return Return without calculating

.pdf of N output here

All parameters must be selected

FIGURE 6, NITROGEN NUTRIENT MANAGEMENT INPUT SCREEN FOR THE RUNOFF WATER QUALITY INDEX FOR AGRICULTURE (MDA, MAWQCP)

Conservation Practices
Certification Eligible

Field	N Nutr. Mgmt	P Nutr. Mgmt	Tillage	Pest Mgmt	Base Score	Imp/Dmg Adjust	Final
(6.15)	(8.50)	(10.00)	(8.00)	(10.00)	8.51	8.38	9.68

Risk index score adjustment

Conservation practice 1 Contour Buffer Strip ⌵ 🗨 ℹ

Conservation practice 2 Cover Crop ⌵ 🗨 ℹ

Conservation practice 3 Grass Waterway ⌵ 🗨 ℹ

+
Apply Practices to Other Fields

- Are the practices functioning as designed?
- Are the practices present where necessary?
- Use NRCS Field Office Technical Guide to assist determination

FIGURE 7, RUNOFF WATER QUALITY INDEX FOR AGRICULTURE FINAL DATA ENTRY PAGE FOR SELECTION OF CONSERVATION PRACTICES. NOTE THE TRACKING BAR AT TOP OF SCREEN FOR FARM ELIGIBILITY AND INDIVIDUAL INDEX COMPONENT SCORES. (MDA, MAWQCP)

The current versions of the template forms for the application stage are available at <https://www.conservationmarketplacemidwest.org/field-stewards-1>.

FIELD STEWARDS GREENHOUSE GAS CERTIFICATE FOR MINIMIZED FIELD EMISSIONS

The Field Stewards GHG certification is based on the Michigan State University and Electrical Power Research Institutes (MSU/EPRI) GHG trading approved protocol. The Field Stewards GHG certification is not used as a credit valuation for the GHG trading market. Instead, the certificate is a verified claim that the farm operation is minimizing NO_x gas release by operating at the University’s recommended nitrogen application rates, timing, placement and forms (sources) of nitrogen being considered. The MSU/EPRI approved protocol for is solely based on nitrogen application rates, because their research findings are that only application rates are consistent and predictable. However, the Field Stewards GHG certificate includes evaluation of the other three of the NRCS 4Rs (i.e., also includes timing, placement and form) the evaluation of the field operation regarding minimization of NO_x emissions. This certificate does not quantify a NO_x GHG reduction for credit sales. Even though there is not a persistent or consistent NO_x gas emission for some practices, when weather cooperates there are additional reductions. The WQIag nutrient management score of 8.5 is required to receive a GHG certificate. At the time of updating this Operations Manual (2019) the MAWQCP has 253,173 confirmed acres that achieve an 8.5 nitrogen management score; this total acre count includes all certified acres which includes all row crops and pastured fields. Figures 8, 9 and 10 illustrate the data entry requirements for the longest entry requirement list possible due to having an advanced performance level, on a corn-soybean rotation that applies both manure and synthetic fertilizers. Regardless of operation system selected, the required data list is the same entries that are used in the WQ certification evaluation WQIag tool.

Field Eligible for Greenhouse Gas Certificate

Operation Notes:

Begin each Field Assessment by clicking on Clear Data button to the right
 A value must be entered for every drop down menu box present
 File Must be saved using a .xism type designation

Example

1. Dose this field receive nitrogen applications (including DAP or MAP)?

1. Choose your BMP Region

2. Select Performance Level for Rate

3. Have you performed on-farm trials?

4. Does this field receive synthetic fertilizer?

5. Does this field receive manure applications?

		Answer Yes or No
Performance Level Must	*Account for previous crop N credits, starter, weed and feed program and contributions from phosphorus fertilizers, such as MAP and DAP	<input type="button" value="Yes"/>
	*Collect field-average composite soil samples from zones less than 20 acres (when collected).	<input type="button" value="Yes"/>
	*Select an appropriate N fertilizer rate within the University of Minnesota recommendations, including supplemental N worksheet OR On-farm trials	<input type="button" value="Yes"/>

FIGURE 8, THE FIRST DATA ENTRY QUESTIONS REQUIRED WHEN USING THE FIELD STEWARDS GREENHOUSE GAS CALCULATOR FOR CERTIFICATION ELIGIBILITY DETERMINATION. THE GHG CALCULATOR EXPANDS OR HIDES DATA FIELDS ACCORDING TO EARLY DATA REQUEST RESPONSES.

Discuss with the farmer which of these criteria were used during the On-farm Trials, before allowing the On-farm Trial question 3 to be selected

Only Check Yes to 'On-farm Trials' if your trial followed the Nutrient Management Initiative guidance protocol including:	
* Except for the Management variable being tested, all other management practices should remain constant	
* Fertile soils are preferred (P levels > 16 ppm Bray/> 12 ppm Olsen; K levels > 121 ppm)	
* Select plot locations based on uniform soil type and landscape position	
* Replications and multiple learning blocks recommended. Plot size width of equipment	
* Maintain at least 30lbs difference in nitrogen application rates for trials. Starter, AMS, MAP, and DAP blends are not recommended	
* Include zero rate check strip or block	
* Include at least 3 years of data collection	

Selection of Advanced Performance Level for Rate Must Answer Yes to All of the Standard Performance Levels Above, Plus a Majority of the Advanced Performance Level BMPs for the Rate that Applies to Your Field.

	Answer Yes, No or N/A
* Accounting for within-field variability using concepts and tools such as zone or landscape position management, and N sensors	Yes
* Use variable rate N technologies	Yes
* Multi-year yield maps	Yes
* Conduct replicate on-farm N rate studies and include a zero N rate. Use these studies to perform delta analysis.	Yes
* N rate is adjusted for in-season yield potential, utilizing N modeling tools, nitrate soil tests, supplemental N worksheet and/or leaf tissue results.	No
* Multi-year basal stalk nitrate test	No
* Goal of nitrogen use efficiency of less than 1.0 pound / bu of corn or NEU of 0.6 - 0.8	Yes
* Lab analysis of representative manure samples are completed before a rate is established	Yes
* Fertilizer and manure applicators are calibrated based on equipment manufacturer's recommended frequency and methods	Yes
* Manure is applied in combination with commercial fertilizers to obtain balanced nutrients	Yes

FIGURE 9, FIELD STEWARDS GREENHOUSE GAS CERTIFICATION CALCULATOR CONTINUED LIST OF DATA ENTRY REQUIREMENTS.

Requirements for Land Application of Manure on Corn - Corn or Corn -Soybean Fields Using Maximum Return To Nitrogen (MRTN); Minnesota Rule Chapter 7020 (Feedlot Rules)																									
<p>The University of Minnesota recommendations provide a "maximum return to N value" (MRTN) for corn-corn or corn-soybean fields. The MRTN is the rate that maximizes profit using a cost of fertilizer relative to the value of corn ratio. At N application rates that exceed the MRTN, there is an increased likelihood of N leaching/loss. Therefore, the Minnesota Pollution Control Agency expects N application rates to be consistent with the appropriate MRTN values. The maximum MRTN values that must be followed are:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">* 180 lb N / acre for corn following corn</td> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px;">* 140 lb N / acre for corn following soybeans</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> </table>	* 180 lb N / acre for corn following corn	N/A	* 140 lb N / acre for corn following soybeans	Yes																				
* 180 lb N / acre for corn following corn	N/A																								
* 140 lb N / acre for corn following soybeans	Yes																								
To Achieve Minimization of Greenhouse Gas Emissions Timing and Placement of N Must Meet the Following Criteria.																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">* Incorporate broadcast fall applied Urea within 3 days to a minimum of 3 inches</td> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px;">* Do not fall apply UAN, incorporate spring applied UAN within 3 days to a minimum of 3 inches</td> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px;">* Apply Ammonia applications at least 4 inches deep, and fall applications of Ammonia and Urea are delayed until soil temperatures at 6 inch depth are stabilized below 50° F</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px;">* Do not apply manure or N fertilizers, including MAP and DAP on frozen soils</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px;">* Inject or incorporate sidedress applications of urea or UAN</td> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px;">* All dry and liquid fertilizers sources that surface applied are followed with tillage incorporation, rainfall in 3-4 days or applied</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px;">* Does not fall apply N to sandy soils</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px;">* All manure applications are incorporated with tillage or subsurface placement tools within 4 day of applications</td> <td style="padding: 2px; text-align: center;">Yes</td> </tr> </table>	* Incorporate broadcast fall applied Urea within 3 days to a minimum of 3 inches	N/A	* Do not fall apply UAN, incorporate spring applied UAN within 3 days to a minimum of 3 inches	N/A	* Apply Ammonia applications at least 4 inches deep, and fall applications of Ammonia and Urea are delayed until soil temperatures at 6 inch depth are stabilized below 50° F	Yes	* Do not apply manure or N fertilizers, including MAP and DAP on frozen soils	Yes	* Inject or incorporate sidedress applications of urea or UAN	N/A	* All dry and liquid fertilizers sources that surface applied are followed with tillage incorporation, rainfall in 3-4 days or applied	Yes	* Does not fall apply N to sandy soils	Yes	* All manure applications are incorporated with tillage or subsurface placement tools within 4 day of applications	Yes	<p style="text-align: center;">Answer Yes, No or N/A</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px; text-align: center;">N/A</td> </tr> <tr> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px; text-align: center;">Yes</td> </tr> <tr> <td style="padding: 2px; text-align: center;">Yes</td> </tr> </table>	N/A	N/A	Yes	Yes	N/A	Yes	Yes	Yes
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FIGURE 10, FINAL DATA ENTRY REQUIREMENTS FOR FIELD STEWARDS GREENHOUSE GAS CALCULATOR CERTIFICATION.

The GHG application form and submittal package are available at <https://www.conservationmarketplacemidwest.org/field-stewards-1>.

FIELD STEWARDS PROGRAM STEPS AND REQUIRED RECORDS (FORMS)

The Field Stewards program steps and required record keeping are organized by farm entry into the program. Each step in the program process is required to place forms and notes for record keeping to a farm specific six-page file folder kept at the aggregator's office. Not all of the steps will be completed on every farm. Some farms may not receive buyer contracts, others may not every suffer site deficiencies or enter in to conflict resolution. The list of possible Field Stewards program steps for farms are:

1. Eligibility Application
2. Certification Activation
3. Certificate Compliance (Audits and/or Operation Changes)
4. Appeals and Conflict Resolution

In addition, there are program steps specific to Aggregator and Third Party Verifier training, program representative authorization, and representative compliance audits.

Each farm specific six-page folder is organized chronologically according to:

- Eligibility Application forms on page 1, with labeled eligibility notes entered in page 5
- Certification Eligibility forms on page 2, with labeled administrative notes entered on page 5
- Certification Activation forms on page 3, with labeled administrative notes entered on page 5
- Certification Compliance forms on page 4, with labeled administration notes entered on page 5
- Page 5 is the entry of all detailed notes necessary for each program step
- Page 6 is the Appeals and Conflict resolution page which includes site deficiency restoration steps and program appeals or complaints lodged by the farmer or field representatives.

Each form template in the process is assigned a unique identifying number to organize which topic the form represents and which specific option the form represents within the topic. The topic is identified by a letter as follows:

- A#, represents the Farm Application process forms and the # is the unique form # in that category
- C#, represents the Farm Certificate Eligibility determination (award or denial) topic and the # represents the unique option to process the topic's current stage
- F#, represents the fact sheet options for information dissemination to the farmer
- I#, represents the inspection forms and which subtopic option the inspection is recording
- L#, represents the legal templates potentially used in the program process
- R#, represents farm summary reports and the # option used
- V#, represents Third Party Verifier forms and the # is the unique subtopic in the review process

Each form also has a PPI or PT designation, to remind representatives if the form contains Private Protected information (PPI) or is for Program Transparency (PT) purposes.

While the number of form options is substantial, program representative use program keys to select the appropriate forms for each step and determination option/condition in that program stage. The following decision flow paths illustrate the order the forms are used in each step of the program life cycle for farms. Again, note that there are decision points which eliminate some forms from being necessary.

FIELD STEWARDS FARM ELIGIBILITY APPLICATION PROCESS

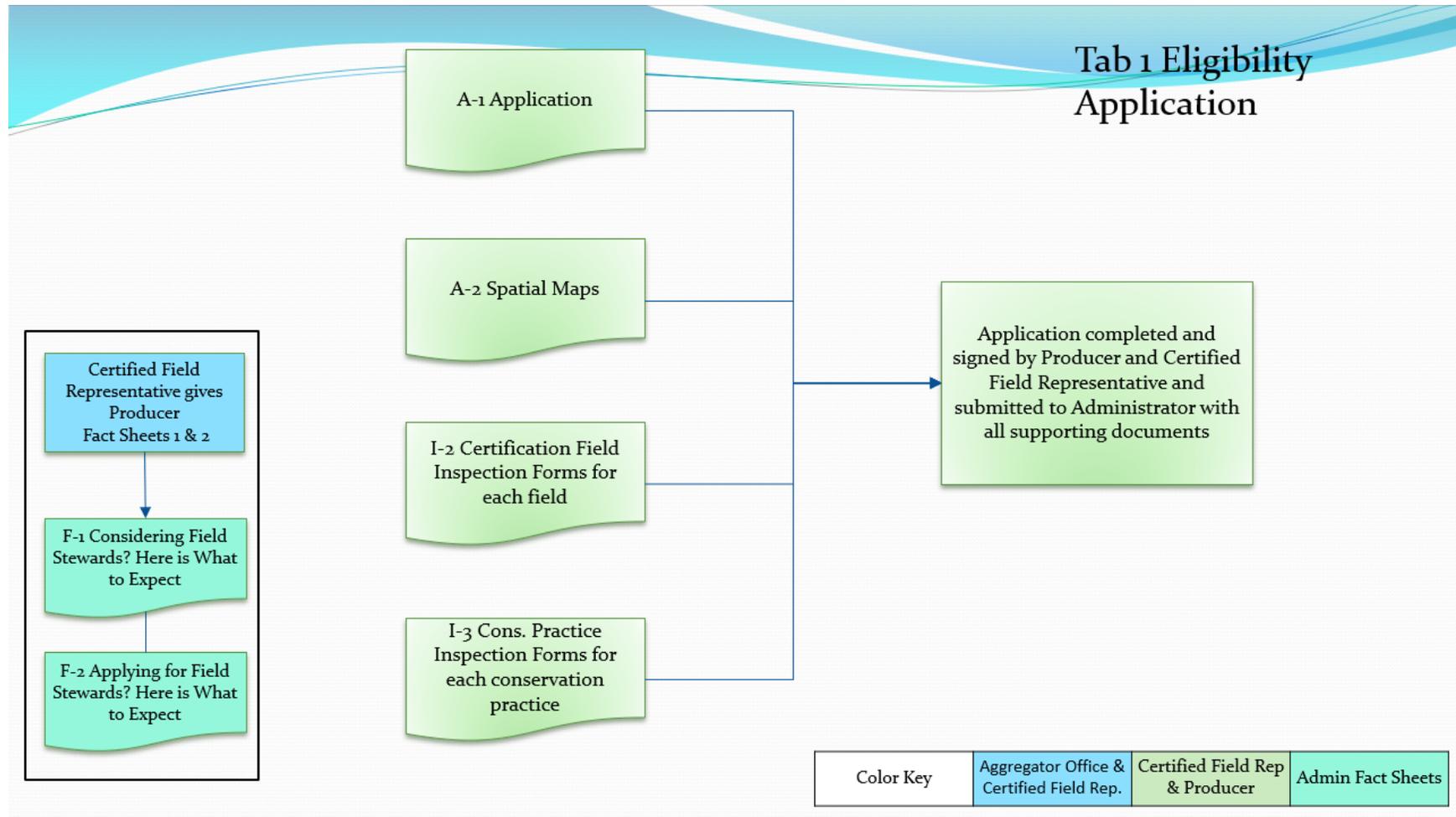


FIGURE 11, THE FARM APPLICATION PROCESS STEPS

FIELD STEWARDS APPLICATION ELIGIBILITY DETERMINATION PROCESS

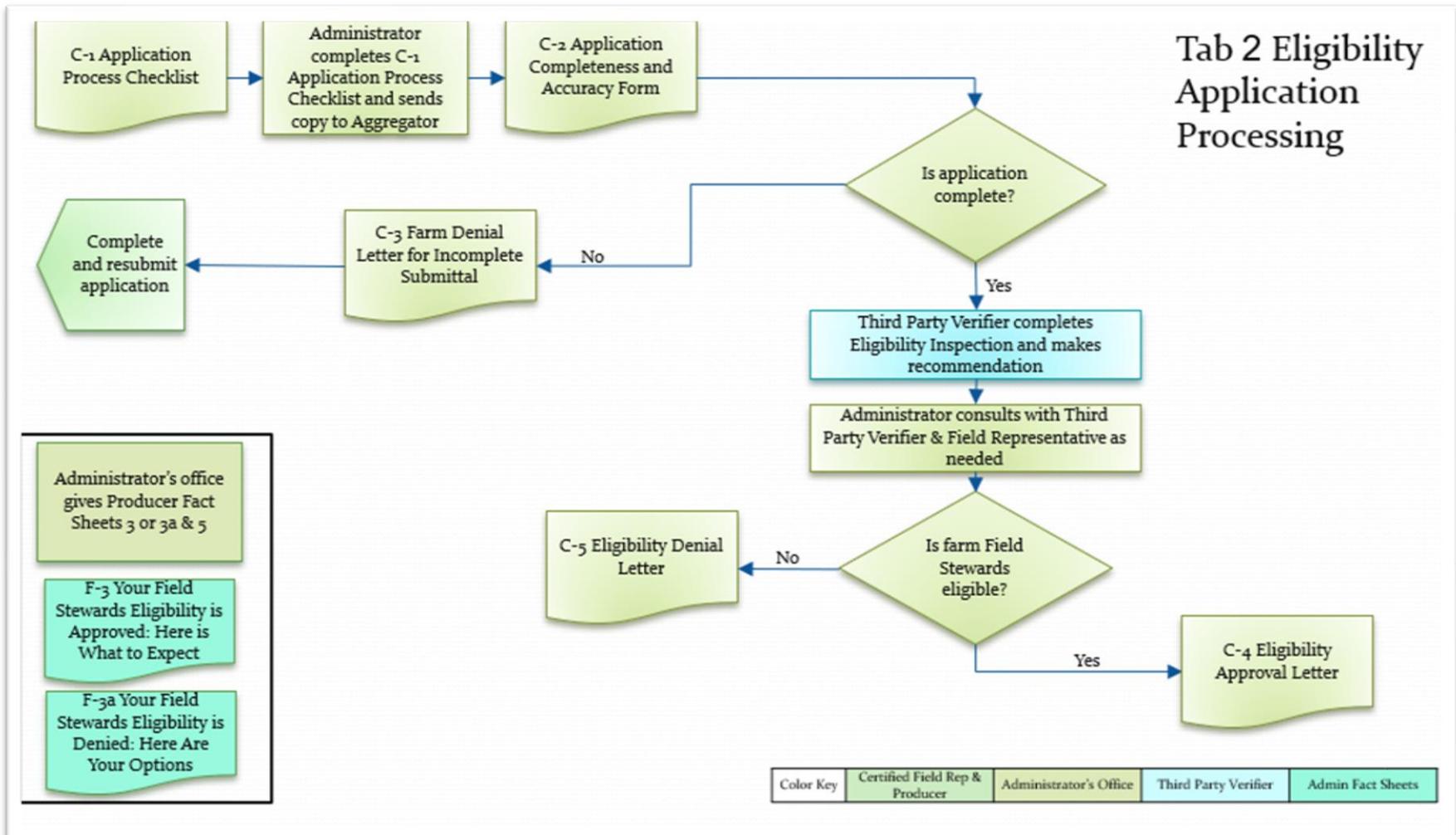


FIGURE 12, ELIGIBILITY REVIEW FLOW PATH FOR THE FIELD STEWARDS PROGRAM. AN APPROVED ELIGIBILITY FINDING ISSUES AN APPROVAL LETTER THAT STATES THE FARM IS ELIGIBLE FOR SELLING FIELD STEWARDS CERTIFICATES. HOWEVER, ELIGIBILITY DOES NOT IMPLY THAT A BUYER IS CURRENTLY AVAILABLE TO MAKE A PURCHASE.

FIELD STEWARDS CONTRACTING/CERTIFICATION ACTIVATION

The Field Stewards Administrator sets this flow path in process once a buyer for the county of interest is located for the farmer.

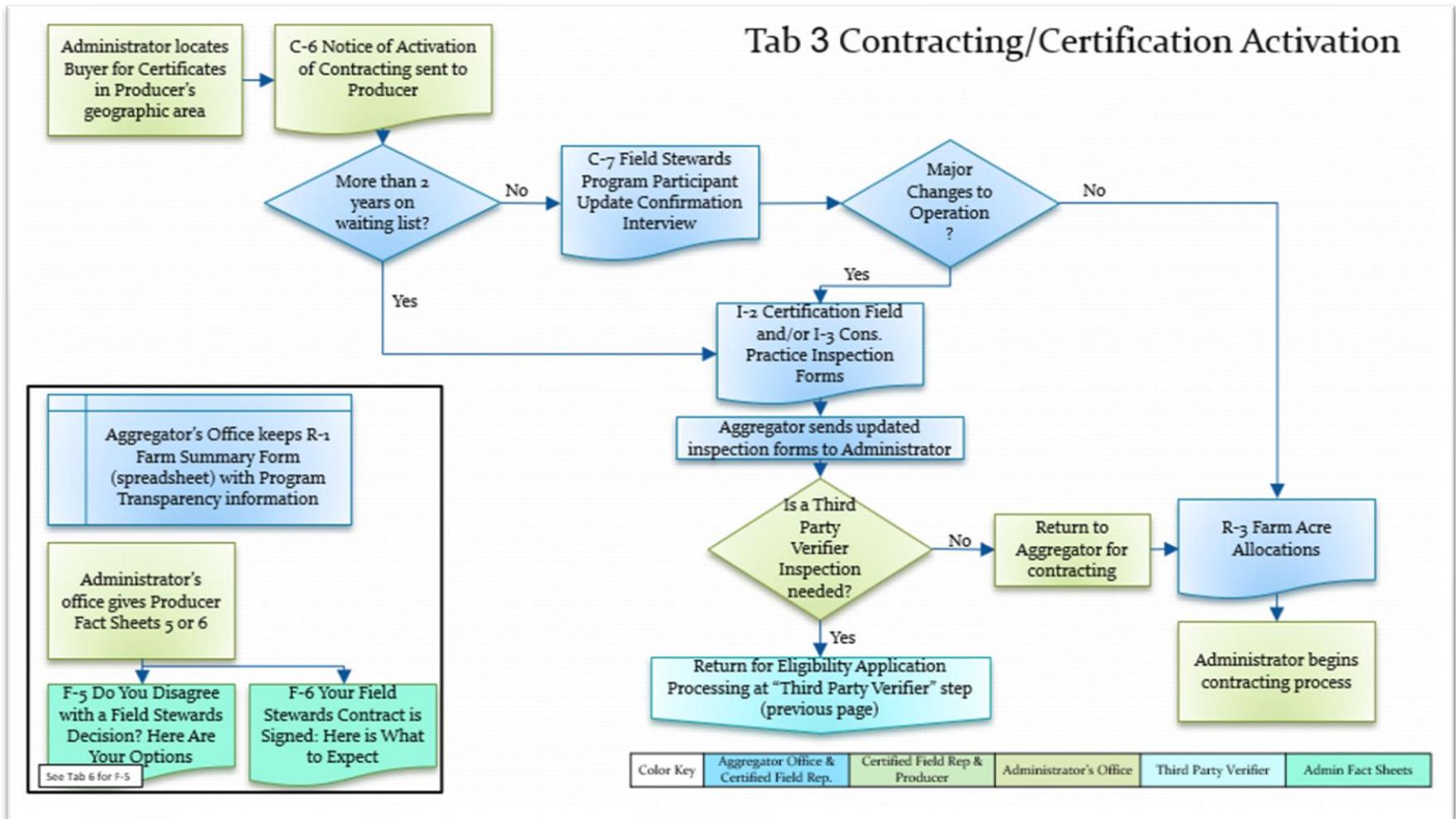


FIGURE 13, FARM CERTIFICATE SALES CONTRACTING AND ACTIVATION FLOW PROCESS.

FIELD STEWARDS INSPECTIONS AND CERTIFICATION COMPLIANCE

The inspection forms are tailored to maintain site records for application process, construction oversight and compliance inspections on the same form. The program's selected Third Party Verifier performs the inspections also requests deficiency corrections when appropriate.

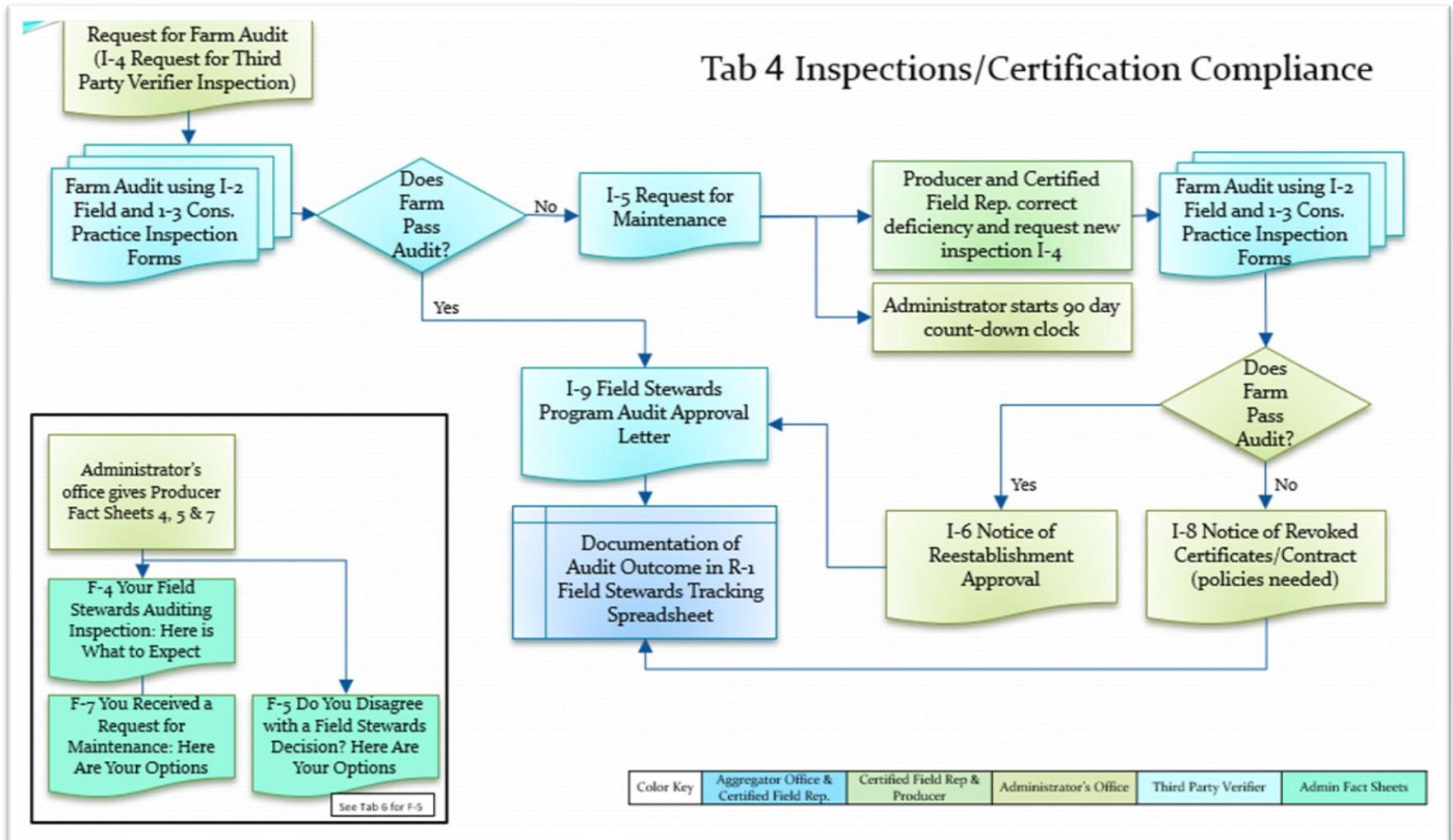


FIGURE 14, THE FIELD STEWARD APPLICATION, CONSTRUCTION AND AUDIT PROCESS SHARE MANY OF THE SAME FORMS. THE FORMS ARE DESIGNED TO RECORD SITE INFORMATION FROM MANY DIFFERENT DATES ON THE SAME FORM FOR EASY COMPARISON OF THE HISTORY OF SITE INSPECTIONS.

FIELD STEWARDS APPEALS AND COMPLAINT RESOLUTION

The Field Stewards Appeals process structured allows a new objective reviewer who is affiliated with the program brought into the complaint process. To date the appeals process has not been tested.

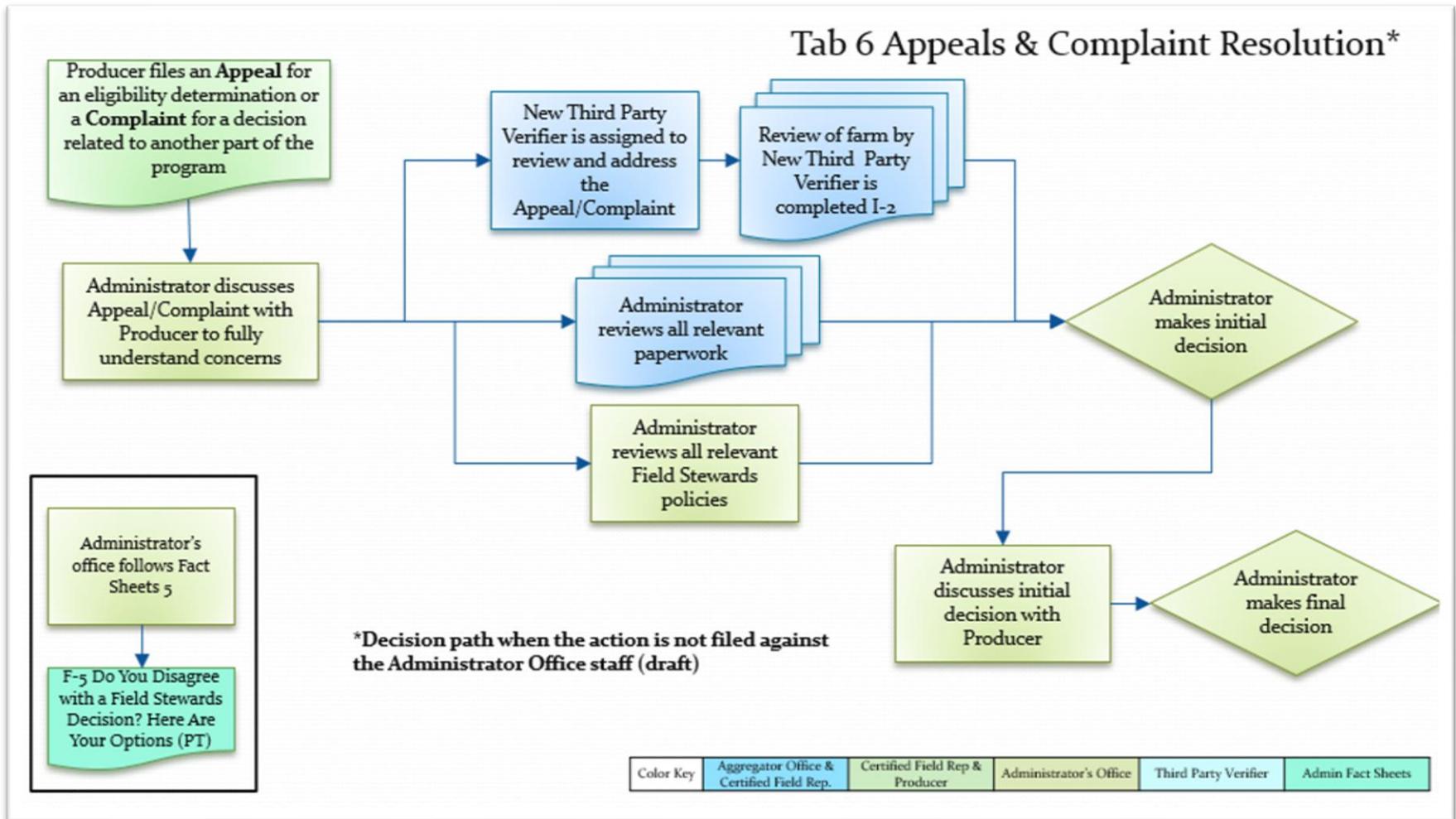


FIGURE 15, FIELD STEWARDS COMPLAINT AND APPEAL PROCESS. PREVIOUS PROGRAM REPRESENTATIVES ARE BROUGHT INTO THE COMPLAINT PROCESS TO PERFORM OBJECTIVE EVALUATIONS OF THE SITE, PARTIES INVOLVED, AND PREVIOUS FINDINGS. THIS PROCESS DOES NOT INCLUDE A COMPLAINT LODGED AGAINST THE ADMINISTRATOR. THE FIELD STEWARDS COMPLIANCE AUDIT AND FIELD DEFICIENCY RESOLUTION PROGRAM

OTHER FIELD STEWARDS PROGRAM FEATURES FOR MAINTAINING CERTIFICATION STATUS

Inspection Forms

The field inspection form (Form I2) provides four columns for recording the results of four separate site visits across the certification life cycle. This feature provides later inspectors easy access to past findings. Likewise, the field BMP site inspection form (Form I3) requires the site inspector to check whether this form is for Site Application & Establishment, a Farmer requested reevaluation for a change in operation, Site Re-establishment, an Appeal or Compliant Resolution process or another situation. Using the same form for BMP inspections throughout the life cycle of the BMP provides the inspector a familiar record format to evaluate the progression of noted and communicated operation and maintenance concerns for a given BMP.

Audit Protocols

Field Stewards, working with MAWQCP staff, have available three different auditing methods. Two have been tested during the Pilot Project. The purpose behind developing three different methods is to provide the program an evaluation and available options in order to minimize certificate transaction costs balancing verification integrity. Audits are scheduled to occur a year or more after the certification evaluation for eligibility is completed. The most concise audit process available is to complete a farm phone interview to confirm the operating system remains the same as what was in place during the farm application evaluation. Two other audit procedures require site visits and detailed reviews of record keeping. The MAWQCP detailed audit process parallels the Field Stewards detailed audit process. The Field Stewards Aggregator for the pilot test, evaluated these two protocols side-by-side and found the results of both methods to be acceptable. However, the forms that were used in the current Field Stewards Pilot Test required additional time for recording. In the future, each step of the program will continue to be revisited to optimize the balance between having sufficient third party verification and minimized transaction costs.

Site Deficiency Restoration

Once a farmer, Aggregator or Third Party Verifier observes a site deficiency and provides notice to all parties involved, a ninety-day window is granted to restore the operation or practice to the condition that the certificate eligibility is based upon. During this window, the certification remains in place. Should the corrections require more time for restoration, the Administrator can determine if continued certification status is appropriate based upon site factors that are outside of the control of the farmer. The folder Tab 4 decision flow path details the steps for site restoration or revoking certification status.

OPERATIONS FOR WORKING WITH THE BUYERS

FIELD STEWARDS CERTIFICATE PURCHASING OPTIONS

A CPG company has two different options for purchasing WQ and GHG Field Stewards certificates. The first option for a buyer is to purchase a quantified number of certificates, equaling the crop commodity needed in the supply chain. This option can contract for 1-year or for 5-years. The second purchase option is for buyers interested in making a one-time payment. A one-time payment advances the company's environmental responsibility portion of their supply chain's sustainability program. By supporting farmers in the Field Stewards program the company is enhancing awareness and providing encouragement of corporate and agriculture commitment to high levels of performance that are necessary to achieve a WQ and/or GHG impact minimization.

OPTION 1, PURCHASE AN ANNUAL QUANTIFIED NUMBER OF CERTIFICATES

Once the Field Stewards Administrator and a Company agree to work together, they determine a number of certificates equaling the annual commodity weight purchased for the CPG line(s), to be offset. The Administrator assists the buyer while working through a calculation process to quantify the number of acres necessary for a certificate offset. Whether the company is purchasing certificates to offset their entire line of CPGs, or is only targeting the commodities used during the production of a premium brand, the calculation process remains the same.

Calculation Background Information

The Field Stewards certificate provides the farmer a crop commodity field operation "dividend", a payment for achieving the program's high level of environmental protection. The farmer's dividend will be based on the number of crop commodity certificates purchased. The buyer's certificates offset the potential for a WQ and/or

GHG impact to occur in their normal supply chain; if the crops were grown on fields with less environmental protection. Because the buyer purchases a weight (i.e., a bushel) and the crop grower manages field using systems across acres, a method is needed to convert farmer acre payments to the buyer's weight-based certificate. The following certificate quantification determination steps are for a meat processing plant. Meat processor's certificate need determination steps are more complex than companies purchasing commodities that are a direct ingredient in the CPG (e.g., cereal). Meat processors are purchasing meat products from growers who depend on feed grains. According to an article by Chuck Coffey posted on the Noble Research Institute website, Table 1 provides an estimate of feed grain per pound of meat produced by specie.

*DIVIDEND:
A RESULTANT RETURN OR REWARD
Merriam-Webster Dictionary*

2009 U.S. Commercial Meat Production (Adapted from Livestock Marketing Information Center)					
Species	Total Pounds Produced	Pounds of Meat from Grain	Pounds of Meat from Grazing Land	Pounds Grain Fed	Pounds Grain Fed per Total Pounds of Meat produced
Beef	26 Billion	11 Billion	15 Billion	66 Billion	2.5
Pork	23 Billion	23 Billion	0	80.5 Billion	3.5
Chicken	35.6 Billion	35.6 Billion	0	89 Billion	2.5

TABLE 1, CHUCK COFFEY ARTICLE POSTED ON THE NOBLE RESEARCH INSTITUTE WEBSITE, FEBRUARY 1, 2011

In Table 1, Coffey credits the total 26 billion pounds of meat from beef cattle produced even though only 11 billion pounds of beef can be attributed to grain feed (which stated another way equates to 6 pounds of grain for one pound of beef produced). Field Stewards has developed more detailed estimation process to convert acres of feed grain into CPG sold pounds of meat by species. A high-level summary of the process for poultry is provided in Figure 11.

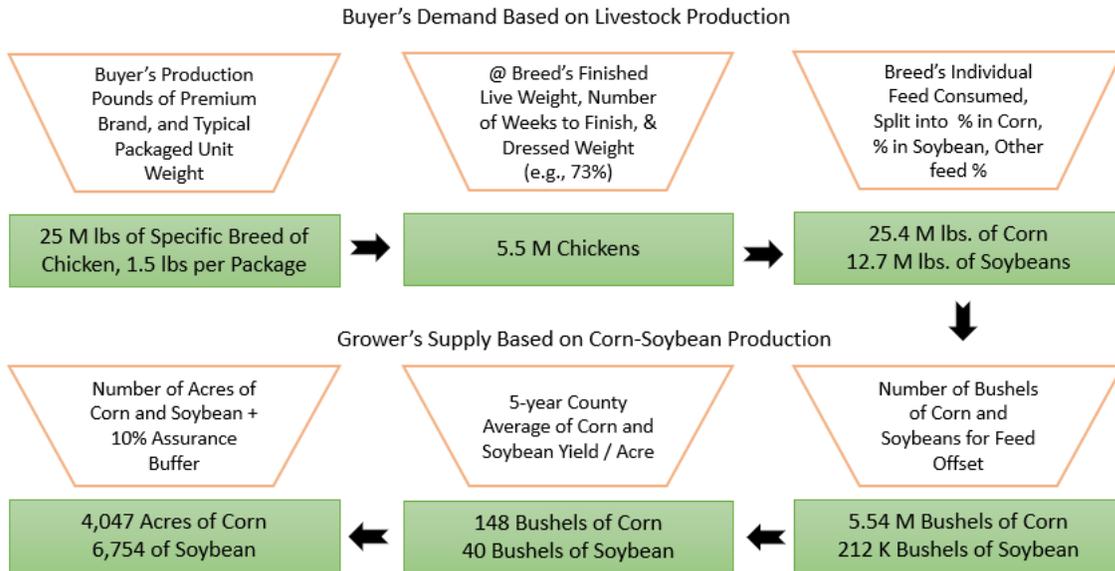


Figure 11, Conversion steps for buyer demand for pounds of feed grain to the required number of certified acres (Field Stewards Certificates) for poultry.

Detailed Explanation of Certificate Quantification Process

Step 1, The buyer selects the meat product line that is to be offset and the region (counties) where the offsets will be purchased from. Based on the selected product line, the buyer provides the Administrator:

- Specific breed of the livestock
- Total pounds of meat packaged for sale
- Average unit weight of the CPG (for later use in determining the sustainability cost per package)

Step 2, Based on the specific breed, the Administrator researches and completes the attached Field Stewards Chicken Example Feed Offset Equation excel® workbook with the buyer input regarding the following details:

- Average live weight in pounds
- Dressed percentage
- Dressed weight in pounds
- Average feed conversion
- Percent of corn in feed grain mix
- Percent of soybean in feed grain mix

- Percent other grains and supplements in feed grain mix
- 5-year USDA NASS Individual Year's Average yield for corn and soybean
- Records are kept regarding the results of the Field Stewards Chicken Example Feed Offset Equation spreadsheet for each county where certificates will be purchased from.

Step 3, Using the Farm and Transaction Cost Estimates Excel® workbook the Administrator calculates the total annual cost, and 5-yr contract cost of certificate purchases for the buyer. The input requirements for this workbook includes:

- Aggregator's billable rate per hour
- Third Party Verifier's billable rate per hour
- Average program evaluation per farm (hours) required for application review
- Same billable rate information for random audits
- Select information from Step 2 results

The Farm and Transaction Cost Estimates results provides the contract funding required and can also be used to optimize the total program costs for the buyer.

OPTION 2, PURCHASE OF CERTIFICATES USING A ONE-TIME PAYMENT

This option, purchase of certificates using a one-time payment, is simpler to administrate. This option provides the buyer with recognition statements saying that the company supports environmental sustainability. However, no mention of company sustainability is provided with this option. The buyer of certificates in this option offers Field Stewards a set purchase amount and selects the counties where farms will be contracted. The Field Stewards Administrator calculates how many certificates the funding will provide by using the Farm and Transaction Cost Estimates Excel® workbook and inputting the current program costs.

Corporate buyers are interested in this type of program for many reasons. The company may be at an early stage of supply chain sustainability and are interested in testing different programs to explore the right fit and level of positive feedback they receive. Others may be concerned that once you commit to an annual payment it is difficult to end the program without appearing to not be supportive of owning an environmental responsibility (even if the company is only switching to a different sustainability effort).

RECORD KEEPING REQUIREMENTS

FIELD STEWARDS ROLE SPECIFIC FILES AND TEMPLATE FORMS

As a recipient of payments from Field Stewards, a condition of being a certified farm or a program representative is to maintain file folders with the completed program forms. The folder is to provide accurate and truthful chronological records of site conditions, changes or additions that are necessary later reviews. Maintaining files in working order is a necessary requirement for verifying the repeatability among evaluations completed by independent representatives; who serve nonfarm program participants. Practicing good record keeping is vital to the Field Stewards program because it provides the ability to:

- Demonstrate evaluation results are repeatable
- Provides the checks and balance approach
- Allow keeping detailed information separate from summarized public reporting
- Provide an expedient conflict resolution process
- Minimize the Field Stewards program liability, by catching errors early in the process

This concludes the overview of the Field Stewards Operations. All form templates, calculators and supporting materials can be accessed on the Conservation Marketplace Midwest website at <https://www.conservationmarketplacemidwest.org/field-stewards-1>