Final Program Evaluation Report

Carbon Credit Generation Program

Funded through the

Natural Resources Conservation Service (NRCS)

Conservation Innovation Grant (CIG) Program

Submitted by the

Chicago Climate Exchange, Inc.

May 16, 2008

Grant Number: 68-3A75-6-110

Project Title: Carbon Credit Generation Program: Cost Effective Procedures to Enroll, Aggregate, Verify and Deliver Agricultural Carbon Credits to Private Sector Markets.

Project Leader:

Dr. Michael J. Walsh
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Program Evaluation Reports: Program evaluation reports will be made periodically to update NRCS, State Conservationists, and other interested stake-holders on the progress and achievements of the Carbon Credit Generation program. The evaluation reports are to:

- assess aggregation and verification program costs and effectiveness;
- identify key enhancements to address concerns of producers;
- identify refinements that enhance cost-effectiveness and reduce transaction costs;
- evaluate the amount of carbon sequestered/registered/aggregated/verified;
- completion of feasibility assessment of program expansion (and national potential);
- compare carbon quantities using CCX and US DOE 1605b methods;
- report on the effectiveness and practicality of alternative GHG aggregation, verification, and accounting methodologies.

CONSERVATION INNOVATION GRANTS
Biannual Progress Report

Grantee Name: Chicago Climate Exchange, Inc.	
Project Title: Carbon Credit Generation Program: Cost Effective Procedures to Enroll, Aggregate, Verify and Deliver Agricultural Carbon Credits to Private Sector Markets	
Project Director: Dr. Michael Walsh	
Contact Information: Chicago Climate Exchange 190 S. LaSalle, Suite 1100 Chicago, IL 60603	**Phone Number:** 312-554-3380 **E-Mail:** mwalsh@theccx.com
Period Covered by Report: September 2006 to February 2008	
Project End Date: February 2008	

Executive Summary:

The Chicago Climate Exchange with the assistance of the NRCS and other stakeholders have developed a framework to facilitate the participation of producers in the market for CO_2 reduction. Chicago Climate Exchange continues to strive to reduce participation costs while ensuring the credibility of the program. Over the course of the program, verification costs per acres have decreased significantly. This decrease in costs results from an increase in the standardization of verification procedures, the facilitation of state level expertise to provide verification services and the continued success in the enrollment of new producers.

Through the funding provided by the grant, Chicago Climate Exchange expanded the eligible enrollment territory to include many of the agricultural production regions of the US. Further work is required to determine sequestration rates in certain productive agricultural regions of the country. Notwithstanding this lack of information, the program has proven the viability of the aggregation methodology for the agricultural sector.

A. Summary of Accomplishments

Background

The carbon credit generation program sought to further intensify and expand CCX's program to develop, aggregate, verify, register and make available for sale carbon credits from the U.S. agricultural sector in a voluntary rules-based market system. A copy of the grant approval is included in Appendix A. Under this proposal, CCX tested alternative quantification approaches, the viability of an agricultural program to meet the potential demand for carbon credits in the future, and the viability of expanding the proposed program to the national level.

This final report summarizes the results of the effort and assesses the achievements enabled by NRCS funding. This report will address progress in each of the key areas of the grant as well as provide a progress report of our efforts to develop carbon markets for agricultural producers.

The Benefits of Conservation Tillage and Grass Plantings

Conservation tillage practices, including no-till and reduced tillage, have several advantages over conventional tillage practices, especially in drier climates. No-till agriculture has proven to be a viable strategy for sustainable management of soils. In addition to direct economic benefits arising out of higher yields and lower costs or a combination of both, several environmental benefits accrue resultant from these practices. No-till agriculture increases soil organic carbon while conserving soil water and inhibiting weeds. Soil organic carbon enhancement improves agronomic productivity and resource use efficiency, especially in distressed soils. In addition past research suggests that increasing the level of soil organic carbon contributes positively to overall soil quality.

In addition to the many environmental benefits the financial benefits of conservation tillage and grass plantings under the CCX offsets program are significant. Through carbon sequestration and other low-cost emission reductions, the emerging carbon markets introduce opportunities for farmers to realize a new income stream for producers by providing global environmental services. This is an important step toward establishing environmental goods and services as an income source and thereby diversifying risk through income diversification.

Timeline

This report addresses events and achievements since the inception of the Grant in August of 2006 through the conclusion in mid February of 2008

Activities

CCX initiated activities on the grant with a project kickoff meeting in September of 2006. The main deliverables outlined in the grant proposal will serve as a reference point to assess major milestones in the project. These deliverables outlined are as follows:

1. Expand the development and implementation of a market-based system for trading agricultural GHG emissions from conservation tillage, grassland plantings, and small scale forestry for 500 to 1,000 producers on up to 1,000,000 acres in the States involved.
2. Expand enrollment, verification and registration of GHG credits resulting from best management practices in animal agriculture and nutrient management.
3. Assessment of alternative GHG sequestration and quantification systems (i.e. the forthcoming US DOE 1605b, etc) for accounting for agricultural carbon.
4. Multiple educational seminars in the project territory.
5. Establishment of State-level verifiers and aggregators or aggregating representatives.
6. Development of a manual for designing such programs in other geographical areas.

The main items within this evaluation document are presented under the following categories that address the set of program goals and deliverables outlined above.

1. Program Expansion
2. Educational and Outreach Efforts
3. Enrollment of Verification and Aggregation service providers
4. Economics of Program

Program Expansion:

One of the primary objectives of the work effort involved expansion of the eligible territory to include other regions in the country and to investigate the feasibility of other land use sinks for carbon sequestration. CCX invited a group of subject matter specialists, including many world renowned experts, from around the country to form a Soil Carbon Technical Advisory Committee (SCTAC). The SCTAC comprised of a diverse group of experts including personnel from the USDA, university researchers, soil carbon verifiers as well as farm groups. This committee, through a series of teleconferences and meetings, studied the feasibility of expanding the no-till and conservation tillage regions nationally. The expansion of eligible territory for the no-till and conservation tillage program is based on surveys of scientific literature across cropping systems in the U.S., weather patterns and other agronomic parameters. This information is used, along with expert judgment, to assign appropriate soil carbon sequestration rates for the continental U.S. A complete set of rules and crediting rates is included within the materials included in this report as Appendix B.

Educational and Outreach Efforts

A central tenet of the current grant is the development of market for environmental services provided by the agricultural community. Education and Outreach efforts are fundamental to

successful market development. Appendix C consists of a sampling of the marketing and education material provided at the education outreach events and a listing of the frequency of events attended by Chicago Climate Exchange and the enrolled aggregators.

Verifier Manual

The verification manual will be a key component of the project that will be utilized in several other deliverables, and will be an advancement of current procedures for verifying acreage in the CCX program. The document is largely technical, and builds on existing methods and guidelines (such as those of 1605b) to enable a greater set of production practices, geographic areas, and producers to be enrolled in the program. One objective is to standardize the set of procedures among regions and operations. A second objective is to facilitate the verification process such that transaction costs for verification are reduced (providing a greater return for producers and program interest on the part of aggregators). A copy of the verifier manual is included as Appendix D.

Aggregator Manual

The aggregator manual is another key component of the project and will be an advancement of current procedures for enrolling acreage in the CCX program. The manual will focuses on crop production practices and eligible regions. The manual as developed to be applicable to conservation farming and rangeland production regions. The intent of the document is to simplify and codify many of the areas of concern of prospective aggregators. The manual specifically addresses: the commercial requirements of being a CCX member, the experience or knowledge required, the commercial processes required to aggregate and verify producers for

participation in the carbon market. Further, manuals for verifiers and aggregators will provide the greatest amount of assistance to potential aggregators and verifiers that are least developed and need assistance most. Several of the current aggregators and verifiers will provide input to the document. A copy of the Aggregator Manual is included as appendix E.

Enrollment of Verification and Aggregation service providers

Since the inception of this grant in September of 2006, several aggregators and verifiers have been enrolled. These new market participants have been active in the project cycle. In total, 4.9 million acres have been enrolled within the U.S. Enrollment is being actively pursued by several entities including non-profit farm associations, non-profit associations and for profit entities. Active entities include:

- AgraGate Climate Credits Corp. (an entity of the Iowa Farm Bureau Federation)
- North Dakota Farmers Union
- The Delta Institute
- Kentucky Corn Growers Association
- First Capital Risk Management
- National Carbon Offset Coalition
- Tatanka Resources

These entities are actively pursuing aggregation in states already active in the program and in those regions wherein eligibility was recently expanded. Table 1 lists participation by state, total number of acres, contracts and tons that have been enrolled.

Table 1 State Level Participation by Acres, Contracts and Tons

	Total contracts	Total acres	Total registered tons since August 2006
AL	1	150	800
CO	149	263,472	104,700
GA	1	218	200
IA	511	269,476	778,500
IL	29	21,080	212,300
IN	87	56,417	98,900
KS	244	275,160	384,200
KY	6	5,272	77,100
MD	8	5,014	6,500
MI	17	8,624	48,000
MN	168	52,438	67,400
MO	67	32,013	60,300
MT	173	417,734	286,800
ND	1,149	1,519,014	1,339,400
NE	1,022	902,809	1,275,600
NY	1	326	200
OH	84	46,435	71,000
OK	7	20,949	3,600
PA	6	2,702	3,600
SC	4	894	200
SD	585	815,982	582,000
TN	5	5,739	4,200
TX	5	2,744	7,600
VA	1	639	800
WA	4	1,471	7,600
WI	100	26,978	61,400
WY	24	122,235	1,800
Total	**4,458**	**4,875,987**	**5,484,700**

Participation by Verification Firms

CCX also approved new soil carbon verification firms as a result of funding provided by the grant. These include North Dakota Association of Soil Conservation District as well as Association of Seed Certifying Agencies. These organizations with their national reach are expected to aid in bringing down the transaction costs for verification. The following firms are approved to provide verification services for CCX program participants:

- Agri-Waste Technology, Inc
- Association of Illinois Soil and Water Conservation Districts

- Association of Official Seed Certifying Agencies
- Michigan Association of Conservation Districts
- North Dakota Association of Soil Conservation Districts
- SES Inc.
- TUV SUD Industrie Service GmbH

Economics of the Program

Consistent with the objectives of the grant, increased participation by aggregators and verifiers have been significant. A measurable benefit of increased participation is the reduction in transaction costs. The cost per acre for verification has decreased significantly in comparison to previous years. Verification which occurred during the final stage of the grant occurred at a cost per acre of approximately $0.034, which is a fraction cost of the verification work done in the early stages of the program. The participation of conservation associations has provided significant cost savings in performing verification services when compared to parties external to the region.

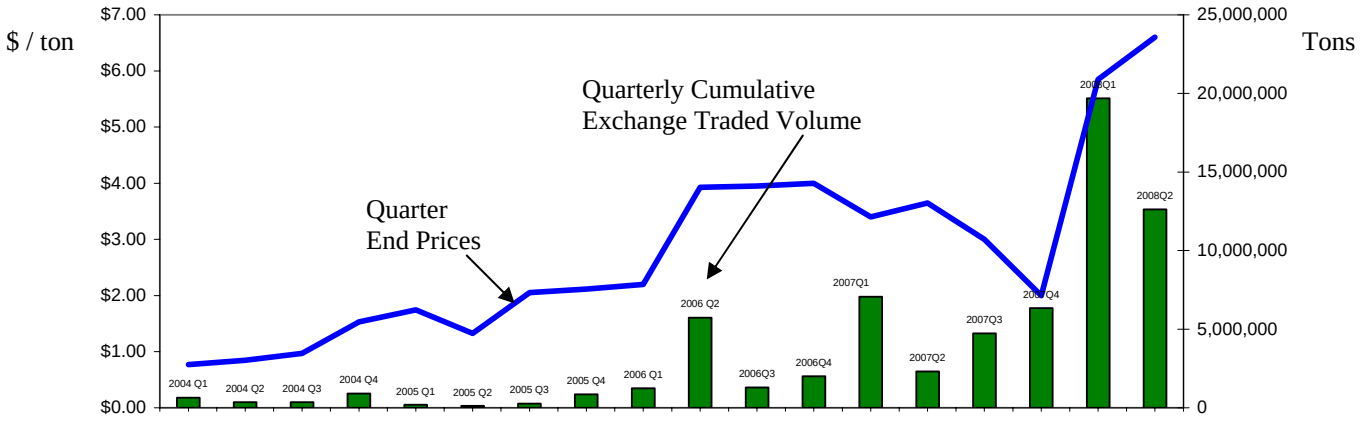
Similar general principles apply to the aggregation process. Those parties that are local and have existing networks in the producer communities tend to have significantly greater participation than entities that are external to the producer community at the time of initiation. The result is that aggregation businesses that leverage existing networks such as the Farm Bureau network and the National Farmers Union have had greater enrollment success than other groups. CCX staff has observed an increase in the level of interest in aggregation from agricultural related business, i.e. those with established producer networks. It is expected that increased competition

in the aggregation business will result in greater benefits for producers as transaction costs are decreased and competition increases the share of revenues from the sale of offsets.

Summary of the Financial Proceeds Transferred to Enrolled Producers:

Since the inception of the grant, the value for one metric ton of sequestered CO_2 has fluctuated between $1.90 per ton and $7.00 per ton. Since August of 2006, a total of 5,484,700 metric tons of CO_2 from soil sequestration were registered in at Chicago Climate Exchange through the carbon credit generation program. At current market prices of $7.00 the notional market value of sequestration services provided by producers is approximately $40.0 million. The following illustrates quarter ending market prices along with quarterly cumulative exchange traded volume since inception of the CCX program.

Figure X: Quarterly CCX Market Price and Exchange Trading Volume: 2003 – current



Summary of Grant Tasks and Deliverables by CCX

The grant was broken out into the six distinct deliverables listed here. This section of the report summarizes the work product achieved by Chicago Climate Exchange and the enrolled aggregators.

Deliverable 1: Document entitled "*Carbon Credit Generation Project Implementation Plan*": After Convening a meeting of the project team, including representation from the State Conservationists, a refined implementation plan will be developed. This will included a refinement of core tasks, such as the design and implementation of in-field verification systems, methods to recruit framers, aggregators and program evaluation and reporting.

Chicago Climate Exchange developed in coordination with aggregators, verifiers and state level conservationists a document entitled "*Carbon Credit Generation Project Implementation Plan*". The document was delivered to NRCS during the first grant progress report in February of 2007 and included a detailed timeline for implementing the components of the grant.

Deliverable 2: NRCS deliverable document titled "*Methods for Conducting In-Field Inspections for Carbon Credit Generation*," is to develop and enhance methods for conducting in-field inspections of participating farmers with the following areas of focus:

i. Identifying enrolled parcels, verifying no-till, and quantifying benefits;
ii. Identifying and training private and public sector staff;
iii. Determining appropriate inspection rates (on the basis of statistical and cost-efficiency considerations);
iv. Verification reporting, auditing of the verification process; and
v. Assess and reduce transaction costs for small scale participants.

The report is for distribution to current and potential verifiers (and aggregators) to act as the standardized procedures for validating crop and rangeland acreage for the CCG program.

This document has been developed by Chicago Climate Exchange and is entitled "*Methods for Conducting In-Field Inspections for Carbon Credit Generation*" also commonly referred to as the '*verifier manual*'.

> Deliverable 3: NRCS deliverable document titled "Carbon Credit Aggregation Procedures," is to identify and prepare carbon credit aggregation procedures with the following area of focus:
>
> i. Finalize contract specifications and reporting methods;
>
> ii. Identify and train aggregation entities;
>
> iii. Enroll aggregators with CCX, establish CCX registry and trading accounts; and
>
> iv. Prepare process for quantifying offsets using US DOE 1605b methods.
>
> The report is for distribution to current and potential aggregators to act as the standardized procedures for aggregating the verified acreage into the CCG program.

This document has been developed by Chicago Climate Exchange and is entitled "Carbon Credit Aggregation Procedures" also commonly referred to as the '*aggregator manual*' and is included in this report.

Chicago Climate Exchange also prepared a process for quantifying offsets using US DOE 1605b methods. The US DOE 1605b approach involves using the "Comet VR" carbon calculation tool to estimate carbon sequestration on individual farms. Whereas Chicago Climate Exchange has elected to determine, with an expert group of soil scientists, the average sequestration rates for the various major

land resource areas (MLRAs) based on published pear reviewed literature for the given conservation tillage practice.

CCX staff in conjunction with our aggregator members have compared carbon sequestration rates generated using the CCX approved values and the US DOE 1605b COMET-VR on-line carbon calculation tool. Results of this exercise have proved informative. On average, the carbon sequestration values generated by inputting enrolled CCX farms and parcels into the COMET-VR calculation tool have been lower than the values approved by CCX. However, in some instances the values have come quite close or been roughly the same as those approved by CCX.

While the reported sequestration values have differed is it perhaps equally or more important to note that many aggregators who assisted with this exercise expressed that the options provided by the COMET-VR calculation tool for crop rotations and other management practices did not allow for an accurate representation of the farms activities. While it is impossible for CCX to know, this may explain some of the differences in rates found between COMET-VR and the CCX approved rates.

CCX feels that a more systematic research approach to comparing COMET-VR with CCX approved values, as well as other established values from research stations, etc., is warranted. Such an effort may be enhanced with the collaboration of entities such as the Consortium for Agricultural Soils Mitigation of Greenhouse Gases (CASMGS), USDA ARS, or other soil carbon research institutions.

The role of the verifier in the Chicago Climate Exchange soil program process is two fold involving both a office and a field component. First, the verifier is to ensure that the information on enrolled participants is accurate, well maintained and properly reflects producer sign ups. The second stage of the process involves a field component wherein the verifier is to ensure the participating producers performed the specified practices on the enrolled acres.

> Deliverable 4: State Level Seminars: State level seminars will be conducted in each of the states involved, with the assistance of the verifiers and aggregators representing each of the states or regions. Training and education materials will be developed for future carbon credit generation efforts.

Chicago Climate Exchange, the various enrolled aggregators, verifiers and extension services hosted, presented, and attended several numerous seminars. To facilitate each of the seminars, training and educational material was provided by all the stakeholders including Chicago Climate Exchange, the aggregators and other interested parties. A copy of the education and material is included in this report.

> Deliverable 5: Program implementation will use the developed methods and procedures to create a standardized system for trading agricultural emission offsets from conservation tillage and grassland plantings. The project deliverable is enrollment of 500 to 1,000 producers on up to 1,000,000 acres in the States involved.

Chicago Climate Exchange enrolled several new aggregators and many new producers over the period of the grant. New acres enrolled in the program exceeded 4.8 million and new enrollments are 4,458 contracts. These new acres and contracts were enrolled in existing and new states wherein the program was expanded. Producers were enrolled into the aggregators databases. Verification occurred on the enrolled acres pursuant to the procedures of the CCX program. Verification reports were provided to CCX and tons issued into the CCX registry accounts in the name of the aggregators. Pursuant to the agreements between aggregators and producers, the aggregators had the ability to access the market to sell the registered tons to other Members of the Chicago Climate Exchange.

Deliverable 6: Final project evaluation of the CCG is to evaluate the success of the stated goals and effectiveness of the project deliverables.

This report consists of the deliverable for this portion of the grant. The executive summary of this report specifically addresses the evaluation points.

Appendix A

United States Department of Agriculture

NRCS
Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

Dr. Michael J. Walsh
Chicago Climate Exchange
190 South LaSalle Street
Suite 800
Chicago, Illinois 60603

AUG 1 2006

Dear Dr. Walsh:

Enclosed are two partially signed Conservation Innovation Grant (CIG) Agreements, number 68-3A75-6-110 between the Chicago Climate Exchange and the United States Department of Agriculture, Natural Resources Conservation Service (NRCS).

If you are in agreement, please have an authorized official sign, retaining one copy for your files and returning the original to the address below no later than two weeks after receipt.

USDA, NRCS, MSD
Grants and Agreements Staff
Room 5224-S
1400 Independence Avenue, S.W.
Washington, D.C. 20250

Furthermore, please reference the above agreement number in any future correspondence pertaining to this agreement.

If you have any questions, please call me at 202.690.0164 or email Frankie.Comfort@wdc.usda.gov.

Sincerely,

Frankie Comfort
Management Services Division

Enclosures

NRCS 68-3A75-6-110

GRANT AGREEMENT

BETWEEN THE

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

AND THE

CHICAGO CLIMATE EXCHANGE

PROJECT: CARBON CREDIT GENERATION PROGRAM: COST EFFECTIVE PROCEDURES TO ENROLL, AGGREGATE, VERIFY AND DELIVER AGRICULTURAL CARBON CREDITS TO PRIVATE SECTOR MARKETS

This grant agreement is made between the U.S. Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS), and the Chicago Climate Exchange (grantee).

I. AUTHORITY

- Section 1240H of the Food and Security Act of 1985, as amended by Section 2301 of the Farm Security and Rural Investment Act of 2002 (Public Law 107-171).

II. PERIOD OF AWARD

This grant award shall be effective from the date of signature and continue in full force and effect for a period of 18 months.

III. PURPOSE

The purpose of this award is for the grantee to provide market-based incentives to enable farmers and other agricultural producers to realize a new income stream derived from the provision of environmental services using existing and emerging carbon markets. These markets are national and potentially global and serve to provide a cost-effective mechanism to aid the overall management and reduction of GHGs, including carbon dioxide and methane. Specifically the program seeks to implement and intensify an innovative system for securing, verifying, and registering sequestered carbon by agricultural producers through conservation tillage, and improved manure management. These procedures can enable producers to capture, store and reduce GHG emissions while also creating significant environmental co-benefits from enhanced air, soil, and water quality through the use of these emissions reducing practices. The project is also to include testing options to reduce transaction costs by simplifying the quantification and reporting of sequestered carbon and reducing emissions.

An additional objective is to include the potential assessment of alternative agricultural carbon quantification systems including but not limited to those that might be specified in the revised USDOE 1605b technical guidelines for agriculture. Under this proposal, CCX will test alternative quantification approaches, the viability of an agricultural program to meet the potential demand for carbon credits in the future, and the viability of expanding the proposed program to the national level.

There are two primary goals of the project: 1). To test the viability of developing a large-scale market-based system that offers incentives for producers to follow specified soil conservation and manure management practices; and, 2). To test the efficiencies and environmental efficacy of alternative GHG accounting systems. All carbon credits would be transferred to the private sector through the CCX.

States for the pilot program are expected to include Indiana, Ohio, Michigan, Pennsylvania, Iowa, Nebraska, Kansas, Missouri, Illinois, North Dakota, New Mexico, New York and Vermont.

IV. CONTACTS

A. Programmatic:

Gus Jordan
Natural Resources Conservation Service
Conservation Innovation Grants
Post Office Box 2890, Room 5239 South Building
Washington, D.C. 20013-2890
Phone: (202) 690-2621
Fax: (202)
gus.jordan@wdc.usda.gov

B. Federal Grant Representative (FGR) and Technical Contact:

After date of award and signature by both parties, NRCS will designate a Federal Grant Representative and technical contact to work closely with the grantee for the duration of the project. The grantee will be notified through separate correspondence from NRCS of the designated FGR and technical contact

C. Administrative:

Frankie Comfort
Natural Resources Conservation Service
Grants and Agreements Specialist
Post Office Box 2890, Room 5224 South Building
Washington, D.C. 20013-2890

Phone: (202) 720-2604
Fax: (202) 720-7149

D. Project Leader:

Dr. Michael J. Walsh
Senior Vice President- Chicago Climate Exchange
190 S. LaSalle Street Suite 800
Chicago, IL 60603
Email: mwalsh@theccx.com
Ph: 312-554-3380

E. Grantee Administrative Contact:

Dr. Peter Griffin
Applied Analytics Group, Inc.
1142 W Barry Ave
Chicago, IL 60657
Email: petegr@apldag.com
Ph: 773-404-1605

V. DELIVERABLES

1. *Document Titled: "Carbon Credit Generation Project Implementation Plan"*: After convening a meeting of the project team, including representation from the State Conservationists, a refined implementation plan will be developed. This will include a refinement of core tasks, such as the design and implementation of in-field verification systems, methods to recruit farmers and aggregators, and program evaluation and reporting. A final implementation schedule will be developed for each of the tasks.

2. *Report Titled: "Methods for Conducting In-Field Inspections for Carbon Credit Generation"*: This report will develop and enhance first-generation methods for conducting in-field inspections of participating farmers with the following areas of focus:
   - identifying enrolled parcels, verifying no-till, and quantifying benefits;
   - identifying and training private and public sector staff;
   - determining appropriate inspection rates (on the basis of statistical and cost-efficiency considerations);
   - verification reporting, auditing of the verification process; and
   - assess and reduce transaction costs for small scale participants.

3. *Report Titled: "Carbon Credit Aggregation Procedures"*: This report will identify and prepare carbon credit aggregation procedures with the following area of focus:
   - finalize contract specifications and reporting methods;
   - identify and train aggregation entities;
   - enroll aggregators with CCX, establish CCX registry and trading accounts; and

- Prepare process for quantifying offsets using US DOE 1605b methods.

4. *State Level Seminars*: State level seminars will be conducted in each of the states involved, with the assistance of the verifiers and aggregators representing each state or region. Training and educational materials will be developed for future carbon credit generation efforts.

5. *Program Implementation*: The carbon credit generation program, using the above set of methods and procedures, is to expand the development and implementation of a market-based system for trading agricultural GHG emissions from conservation tillage, grassland plantings, and small scale forestry for 500 to 1,000 producers on up to 1,000,000 acres in the States involved.
   - Establishment of State-level verifiers and aggregators or aggregating representatives;
   - enroll individual farmers through aggregators;
   - undertake verification and reporting procedures;
   - receive CCX carbon credits into aggregator's registry accounts;
   - execute carbon credit trades;
   - identify and implement program refinements as appropriate; and
   - Development of a manual for designing such programs in other geographical areas.

6. *Program Evaluation Reports*: Program evaluation reports will be made periodically to update NRCS, State Conservationists, and other interested stake-holders on the progress and achievements of the Carbon Credit Generation program. The evaluation reports is to:
   - assess aggregation and verification program costs and effectiveness;
   - identify key enhancements to address concerns of producers;
   - identify refinements that enhance cost-effectiveness and reduce transaction costs;
   - evaluate the amount of carbon sequestered/registered/aggregated/verified;
   - completion of feasibility assessment of program expansion (and national potential);
   - compare carbon quantities using CCX and US DOE 1605b methods;
   - report on the effectiveness and practicality of alternative GHG aggregation, verification, and accounting methodologies.

VI. PAYMENT LIMITATIONS

Funding for this grant is from the Environmental Quality Incentives Program (EQIP). Each CIG Project must involve producers that are eligible to receive payments under EQIP. Grants and participating producers must comply with a number of provisions related to EQIP and EQIP eligibility:

1. $450,000 Payment Limitation: Section 1240G of the Food Security Act of 1985 (as amended by the Farm Security and Rural Investment Act of 2002), 16 U.S.C. 3839aa-7, imposes a $450,000 limitation for all cost-share or incentive payments disbursed to individuals or entities under an EQIP contract between 2002 and 2007. The limitation applies to grant funds that are provided, either directly or indirectly, to an individual or entity to carry out structural, vegetative, or management practices. The grant funds that are provided count toward each individual's or entity's EQIP

payment limitation. The procedures and policies of the EQIP (7 CFR 1466) will be followed to implement this payment limitation for this grant. Also, the grantee will follow reporting requirements as outlined in IX below.

2. Adjusted Gross Income: Section 1604 of the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) amended the Food Security Act of 1985 (1985 Farm Bill) by adding a new Adjusted Gross Income (AGI) provision that limits the eligibility of certain individuals and entities for commodity and conservation programs benefits. For the 2003 through 2007 crop, fiscal, or program years, an individual or entity is not eligible for program payment or benefit if the individual's or entity's average adjusted gross income exceeds $2.5 million for the three tax years immediately preceding the applicable year. An exemption is provided in cases where 75 percent of the adjusted gross income is derived from farming, ranching, or forestry operations.

3. Highly Erodible Land (HEL) and Wetlands Conservation Compliance: The Food Security Act of 1985, as amended, requires that all persons that produce agriculture commodities must protect all cropland classified as being highly erodible from excessive erosion, as well as protecting wetlands. The provisions have been amended in the 1990, 1996, and 2002 Farm Bills.

VII. FUNDING AND PAYMENT PROCEDURES

1. NRCS EQIP funding in the amount of $750,000 has been obligated for this effort.

2. The maximum financial obligation of NRCS under this grant award is the amount of funds obligated for the project. This amount is stated in VI.1 and on the approved attached budget. However, in the event that an erroneous amount is stated on the approved budget, or any supporting document relating to this grant award, NRCS shall have the unilateral right to make the correction and to make an appropriate adjustment in the NRCS share of the award to align with the Federal amount authorized.

3. Requests for payment shall be submitted by the grantee on Standard Form (SF) 270 to NRCS. Requests should be submitted monthly or quarterly (whichever is mutually agreed upon by both parties). Requests will cite the grant number, fund citation, remittance address, and billing period. The SF-270s are to be submitted to the programmatic contact identified in IV.A.

   Fund Citation: 0676f75

4. Payments received under this agreement should use the electronic funds transfer (EFT) procedures in accordance with 31 Code of Federal Regulations (CFR) 208. EFT procedures will comply with USDA National Finance Center (NFC) requirements. The NFC website may be accessed at www.fms.treas.gov/eft/forms/hmtl and grantee may download the SF 3881, ACH

Vendor/Miscellaneous Payment Enrollment Form. Instructions are included on how to complete the form. Also please provide a Tax Identification Number (TIN) and address where remittance is to be sent.

5. The method of payment between the grantee and its contractors shall be in accordance with the policies and procedures established by the grantee, except that the contractors may not use the USDA OFM/NFC method to request payments. If the grantee makes advance payments to contractors, it shall ensure that the timing of such payments is designed to minimize elapsed time between the advance payment and the disbursement of funds (usually 30 days). Payment requests from the grantee's contractors shall not be sent to NRCS for review or approval.

6. Costs incurred in excess of the NRCS share of approved project costs under this grant are the sole responsibility of the grantee.

7. Work performed under this grant is subject to inspection and evaluation at all times by officials of NRCS, or by any of their duly authorized representatives, through such mechanisms as the review of performance reports and site visits.

VIII. FINANCIAL REPORTING

1. Grantees receiving Federal funds of more than $25,000 are required to submit a SF 272 (Report of Federal Cash Transactions), and when necessary, the continuation sheet, SF-272-A, no later than 15 days following the end of each quarter or 90 days after project completion. These reports are used to monitor cash advanced to recipients and to obtain disbursement and outlay information for each award. Reports are to be submitted to the NRCS administrative contact identified in section IV.C.

2. Grantees must submit a Financial Status Report (SF 269) no later than 30 days after the end of each quarter and 90 days after completion of project. The report should be submitted to the NRCS administrative contact identified in section IV.C.

IX. MONITORING AND REPORTING

1. The grantee is responsible for monitoring day-to-day project performance to ensure that project goals and performance are met, for containing costs, and for ensuring that progress is reported to NRCS in a timely manner. Changes in plans that are seen as materially accelerating or delaying established performance schedules or resulting in costs deviations shall be reported immediately to the NRCS programmatic contact identified in section IV.A. Failure to provide notification of problems that could impact schedules or costs or failure to report performance in a timely manner will be considered performance deficiencies.

2. To satisfy formal reporting requirements, regular progress reports must be submitted by the grantee. Every 6 months the grantee must submit a written performance

progress report to the NRCS technical contact at the address shown in section IV.A above. This report is distinct from the quarterly financial report outlined in section VIII above. Each report shall cover work performed during the previous 6-month period, including any funded or unfunded time extensions, a comparison of actual accomplishments to project goals, and a statement of work projected to be completed in the next 6-month period. A progress report template will be provided to grantees by the NRCS programmatic contact identified in IV.A.

3. To satisfy the requirements of the EQIP (7 CFR 1466) compliance measures highlighted in section V. above, the grantee is required to submit as a component of the biannual progress report:

   a. A list of producers, identified by name and social security number, of all EQIP-eligible producers or entities involved in the project.

   b. The dollar amount of direct and indirect payment made to each individual producer or entity for any structural, vegetative, or management practices. Both quarterly and cumulative payment amounts must be submitted.

   c. A self-certification indicating that each individual or entity receiving a direct or indirect payment through this grant is in compliance with the EQIP Payment Limitation, AGI, HEL, and Wetlands Conservation Compliance Farm Bill provisions.

4. The FGR and the Technical Contact will have technical oversight responsibility for the project. The grantee must send copies of each biannual progress report to the FGR and technical contact, and comply with any requests for information from these individuals.

5. A final report must be submitted within 90 days after completion of project detailing project activities, funding received and expended, results, potential for transferability of results, and conclusion. This report shall be submitted to the programmatic contact identified in IV.A.

X. PRIOR APPROVAL REQUIREMENTS

The following are the most common situations requiring prior approval. However, the grantee is also bound by any other prior approvals requirements of the applicable administrative provisions and Federal cost principles as stated in paragraph XII.

A. Purpose or Deliverables

When it is necessary for the grantee to modify the purpose or deliverables, the grantee must submit to the NRCS administrative contact a justification for the change along with the revised purpose or deliverables of the award.

B. Change Key Personnel

When it is necessary for the grantee to change key personnel, the grantee must submit a written request to the NRCS administrative contact to change the key personnel. The request should contain a copy of the new individual(s) qualifications and a signature of the proposed replacement signifying his/her willingness to serve on the project.

C. Subcontractual Arrangements

The grantee must submit to the NRCS administrative contact a justification for the proposed subcontractual arrangements, a statement of work to be performed, and a detailed budget for the subcontract. Subcontractual arrangements disclosed in the application do not require additional post-award approval.

D. Absence or Change in Project Leadership

When a Project Director, or the person responsible for the direction or management of the project:

a. Relinquishes active direction of the project for a period of more than three consecutive months, or has a 25 percent or more reduction in time devoted to the project the grantee must notify the NRCS administrative contact in writing identifying who will be in charge during the project director's absence. The notification should include the qualifications and a signature of the replacement signifying his/her willingness to serve on the project.

b. Severs his/her affiliation with the grantee, the grantee options include:
    i. Replacing the project director. The grantee must request in writing from the NRCS administrative contact approval of the replacement and must include the qualifications and a signature of the replacement signifying his/her willingness to serve on the project.
    ii. Subcontracting to the former project director's new organization. The grantee must request approval from the administrative contact to replace the project manager and retain the award, but subcontract to the former project director's new organization certain portions of the project to be completed by the former project director.
    iii. Relinquish the award. The grantee must submit to the NRCS administrative contact a signed letter by the grantee and the project director which indicates the grantee is relinquishing the award. The letter should include the date the project director is leaving and a summary of progress to date. A final SF 269, which reflects the total amount of funds spent by the awardee, should be attached to the letter.

c. Transfer the award to his/her new organization. The authorized organizations representative at the new organization must submit as soon as the transfer date

is firm, and the amount of funds to be transferred is known, to the NRCS administrative contact:

i. The forms and certifications included in the application package.
ii. A project summary/work statement covering the work to be completed under the project (deliverables and objectives must be the same as those outlined in the approved proposal),
iii. An updated qualifications statement for the project director showing his/her new organizational affiliation.
iv. Any cost sharing requirements under the original award transfer to the new institution, therefore, cost-sharing information, must be included in the proposal from the new organization.

NOTE: The transfer of an award from one organization to another can take up to 90 days to accomplish, this may result in a delay in the project director resuming the project at the new organization.

E. No-Cost Extension of Time

When a no-cost extension of time is required, the grantee shall submit to the NRCS administrative contact a written request no later than 30 days prior to the expiration date of the award. The request shall contain the following:

a. The length of additional time required to complete the project and a justification for the extension.
b. A summary of progress to date.
c. An estimate of funds expected to remain unobligated on the scheduled expiration date.
d. A projected timetable to complete the portions(s) of the project for which the extension is being required.
e. Signature of the grantee and the project director.
f. A status of cost-sharing to date.

NOTE: An extension will not exceed 12 months. Only in exceptional cases will more than one extension be granted. The award period including any subsequent authorized extension shall not exceed 3 years.

Request(s) for no-cost extensions received after the expiration of the award will not be granted.

XI. PATENTS, INVENTIONS, AND COPYRIGHTS

A. Allocation of rights to patents, inventions, and copyrights shall be in accordance with 7 CFR 3019.36. This regulation provides that small businesses normally may retain the principle worldwide patent rights to any invention developed with USDA support. This provision also applies to commercial organizations for the purposes of this grant.

B. 37 CFR Part 401.14 requires the disclosure of each subject invention to the Federal Agency within two months after the inventor discloses it in writing to contractor personnel responsible for patent matters. Invention disclosure statements pursuant to 37 CFR Part 401.14(c) shall be made in writing to:

Management Services Division
Grants and Agreements Staff
1400 Independence Avenue, SW
Room 5221 South Building
Washington, DC 20250

C. USDA receives a royalty-free license for Federal Government use, reserves the right to require the patentee to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically.

D. The acknowledgement of NRCS support must appear in the publication of any material, whether copyrighted or not, and any products produces in electronic formats (e.g. World Wide Web pages, computer programs, etc.) which is substantially based upon or developed under this award:

- This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number (grantee should enter the applicable award number here).

In addition, all publications and other materials, except scientific articles or papers published in scientific journals, must contact the following statement:

- "Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture."

The grantee is responsible for assuring that an acknowledgement of NRCS is made during news media interviews, including popular medial such as radio, television, and news magazines that discuss in a substantial way work funded by this award.

XII. PROVISIONS AND CERTIFICATIONS

A. Administrative Provisions:

This grant, and contracts, or other agreements at any tier under this grant, shall be governed to the extent applicable by the following provisions that are appropriate to the type of organization receiving the award, regardless of tier, as are in effect on the effective date of award and hereby incorporated by reference: (The full text for CFR references may be found at http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1)

1. 7 Code of Federal Regulations (CFR) Part 3015, "Uniform Federal Assistance Regulations";
2. 7 CFR Part 3016, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments";
3. 7 CFR Part 3017, "Governmentwide Debarment and Suspension (Nonprocurement)";
4. 7 CFR Part 3018, "New Restrictions on Lobbying";
5. 7 CFR Part 3019, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-Profit Organizations";
6. 7 CFR 3021, "Government wide Requirements for Drug-Free Workplace (Financial Assistance);
7. 7 CFR Part 3052, "Audits of Institutions of Higher Education and Other Non-Profit Institutions";
8. 2 CFR Part 215, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Nonprofit Organizations (OMB Circular A-110); and
9. Treasury Circular 1075, Withdrawal of Cash from the Treasury for Advances under Federal and Other Programs; which are hereby incorporated by reference.

B. Federal Cost Principles:

Allowable project costs shall be determined in accordance with the authorizing statute, the purpose of the grant award, and, to the extent applicable, by the following Federal costs principles that are applicable to the type of organization receiving the award, regardless of tier, as are in effect on the effective date of award and hereby incorporated by reference: (The full text for OMB Circulars may be found at http://www.whitehouse.gov/omb/circulars/).

1. OMB Circular A-21, "Cost Principles for Institutions of Higher Education;
2. OMB Circular A-87, "Cost Principles for State and Local Governments" (Including certain Indian tribal governments);
3. OMB Circular A-122, "Cost Principles for Nonprofit Organizations" other than institutions of higher education; and
4. Federal Acquisition Regulations, Part 31, (http://wwwarnet.gov/far) "Contract Cost Principles and Procedures."

C. The attached assurance and certifications (SF 424B) are hereby incorporated into this grant award.

D. The grantee will have sufficient funds available to meet any non-Federal costs necessary to ensure completion of approved project plans.

E. The grantee is not delinquent on any Federal debt, pursuant to OMB Circular No. A-129, "Managing Federal Credit Programs."

F. The grantee will conduct all procurement activities in a manner that provides, to the maximum extent possible, free and open competition.

G. The grantee is responsible, without recourse to NRCS or USDA, for the settlement and satisfaction of all contractual and legal issues arising out of arrangements entered into between the grantee and third parties to carry out approved project activities. Matters concerning violation of law should be referred to the Federal, State, or local authority having proper jurisdiction.

H. The Federal Travel Regulations will serve as a guideline for any travel performed under this grant.

I. Employees of NRCS shall participate in efforts under this agreement solely as representatives of NRCS. To this end, they shall not serve or participate as directors, officers, or employees of the grantee, or otherwise serve or hold themselves out as representatives of grantee. They also shall not assist the grantee with efforts to lobby Congress, or to raise money through fund-raising efforts. NRCS employees must avoid any conflict of interest, or the appearance thereof, related to efforts under this agreement. Further, NRCS employees shall immediately report to their immediate supervisor any negotiations or discussions that they have with the grantee concerning future employment and, upon engaging in such discussions or negotiations, shall refrain from participation in matters regarding the grantee until approved by the agency.

XIII. AMENDMENTS/CHANGES

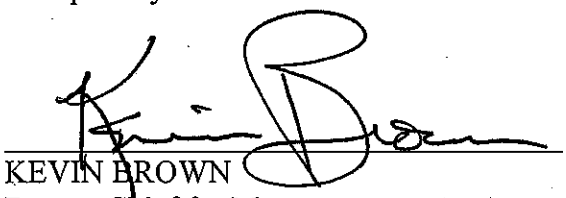
This grant may be amended or modified by written amendment to the award through an exchange of correspondence between authorized officials of the grantee and NRCS. This award can be terminated by NRCS, if NRCS determines that the grantee has failed to comply with the terms, conditions, and provisions of this award. In the event this award is terminated for any reason, the financial obligations of the parties will be those set forth in the CFR Title 7, Part 3015, subpart N, which is incorporated by reference.

XIV. SPECIAL TERMS AND CONDITIONS

In accordance with 2CFR 215.14, NRCS imposes the following special condition on the grantee:

The grantee shall be paid on a reimbursable basis only. This additional requirement is imposed because NRCS can not determine from the grantee's application for award whether the Federal funds requested and cost sharing or matching are necessary and reasonable for proper and efficient accomplishment of the project and program objectives. The grantee shall submit the required information to the NRCS administrative contact described in IV.C. After a review of the information and it satisfies the requirements of 2CFR 215.23, this additional requirement may be rescinded.

Accepted by:



KEVIN BROWN
Deputy Chief for Management
Natural Resources Conservation Service

8/1/06
DATE

8-16-06
DATE

Enclosures

Appendix B

CCX Agricultural Soil Carbon Sequestration Offset Project Guideline

I. Introduction

Carbon is removed from the atmosphere and sequestered into soils through growth of crops. When left undisturbed through conservation tillage (low and no-till), soils can accumulate carbon for several decades, with significant side benefits. CCX rules allow offsets to be earned by farmers who commit to manage their enrolled acres under continuous low- or no-till, or who enroll newly-planted (post 1998) grasslands.

II. Definitions

For CCX purposes Conservation Tillage is as defined in the Natural Resources Conservation Service National Handbook of Conservation Practices. These definitions are: No-till/Strip-till - Managing the amount, orientation, and distribution of crop and other plant residue on the surface year-round while growing crops in narrow slots or tilled or residue-free strips in soil previously untilled by full width inversion implement. Practices and implements not found below may be considered by CCX on case by case basis. While ridge till is included under the definition of conservation tillage provided by NRCS, it will not be eligible for Exchange Soil Offsets.

III. Applicability

This protocol applies to aggregators and producers that have enrolled in the CCX Agricultural Soil Carbon Sequestration Offset program in eligible regions of the United States and Canada. A list of eligible territories is included as Appendix A of this document. Additional regions may be added based on expert input.

IV. Eligibility

Producers who engage in continuous conservation tillage in eligible regions of the US and Canada may sign up with a CCX approved aggregator. Producers contract with aggregators for continuous conservation tillage on specified acres.

Zone A:

States and counties included in Zone A are provided in the Appendix. Exchange Exchange Soil Offsets will be earned at a rate of 0.6 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include, but are not limited to the following:

(1) Continuous cotton, soybeans and pulse crops (i.e. beans, peas, lintels, etc.) are eligible only if there is a cover crop;

(2) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors,

anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;

(3) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(4) Histosol soils in Land Resource Region (LRR) T are not eligible;
(5) In general if the implement would require that a leveling or smoothing activity follows, it would likely result in too much soil disturbance
(6) Fallowed acres are not eligible in this region;
(7) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone B:

States and counties included in Zone B are provided in the Appendix. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) For the North Dakota portion of Zone B, adherence to the cropping and implementation guidelines outlined below should at a minimum be reflective of management practices resulting in a Soil Tillage Intensity Rating (STIR) of 20 or less and a Soil Conditioning Index (SCI) or 0.3 or greater (USDA-NRCS North Dakota Conservation Practice Standard 329, September 2005);
(2) Continuous soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(3) Irrigated acreage in Land Resource Region G of Zone B (counties within Land Resource Region G are indicated in Appendix 9.3B) is eligible for enrollment provided that the acreage began irrigation in crop years prior to April 17, 2007. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
(4) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
(5) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(6) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(7) Fallowed acres are not eligible in this region;
(8) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone C:

States and counties included in Zone C are provided in the Appendix. Exchange

Soil Offsets will be earned at a rate of 0.32 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Continuous soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(2) Irrigated acreage in LRR G of Zone C (counties in LRR G are indicated in Appendix 9.3B) is eligible for enrollment provided that the acreage began irrigation in crop years prior to April 17, 2007. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
(3) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
(4) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(5) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(6) Chemical fallowed acres in Major Land Resource Areas (MLRA) 52, 53A, and 54 (county listings provided in Appendix 9.3B) are eligible in this region but will not receive Exchange Soil Offsets for the years in which fallow takes place. Non-fallow years will receive Exchange Soil Offsets at a rate of 0.32 metric tons per acre per year;
(7) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs

Zone D:

States and counties included in Zone D are provided in the Appendix. Exchange Soil Offsets will be earned at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Irrigated acreage in LRRs H and G of Zone D (LRR H and LRR G counties indicated in Appendix 9.3B) is eligible for enrollment provided that the acreage began irrigation in crop years prior to April 17, 2007. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
(2) Continuous cotton , soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(3) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
(4) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;

(5) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(6) Fallowed acres are not eligible in this region;
(7) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone E:

States and counties included in Zone E are provided in the Appendix. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Irrigated acreage in LRR H of Zone E (counties within LRR H are indicated in Appendix 9.3B) is eligible for enrollment provided that the acreage began irrigation in crop years prior to the date of this advisory. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
(2) Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(3) Histosol soils in Land Resource Region T are not eligible;
(4) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
(5) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(6) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(7) Fallowed acres are not eligible in this region;
(8) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone F:

States and counties included in Zone F are provided in the Appendix. Exchange Soil Offsets will be earned at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(2) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;

(3) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(4) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(5) Fallowed acres are not eligible in this region;
(6) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone G:

States and counties included in Zone G are provided in the Appendix. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
(2) Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
(3) Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
(4) In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
(5) Fallowed acres are not eligible in this region;
(6) No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone H:

Canadian provinces included in Zone H are Manitoba, Saskatchewan and Alberta. Rural municipalities having black and gray soils are eligible to earn Exchange Soil Offsets at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous zero or no-tillage for all of the years 2006 through 2010 on acres specified upon project registration. Rural municipalities having brown and dark brown soils are eligible to earn Exchange Soil Offsets at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous zero or no-tillage for all of the years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

(1) Seeding must take place via direct seeding into standing stubble using a narrow opener, with not more than 1/3 of the seedbed disturbed. For example, a three inch opener on a nine inch row spacing, or a four inch opener on a 12 inch row spacing;
(2) Chemical fallowed acres in Canada are eligible in this region but will not receive Exchange Soil Offsets for the years in which fallow takes place;
(3) Tillage fallow is not permitted;

(4) Exchange Soil Offsets will not be issued to enrolled acreage in the years in which a flax crop is grown;
(5) Secondary fertilizer application is permitted during crop growth provided it is applied with a narrow opener or via broadcast or surface banding methods;
(6) Deep banding is permitted provided that the implement does not result in heavy soil disturbance including leveling or smoothing the soil after application. For example, a maximum of a 1.5 inch knife on nine inch spacing, or a two inch opener on 12 in spacing is acceptable;
(7) Liquid manure injectors are permitted provided that the implement does not result in heavy soil disturbance including leveling or smoothing the soil after application;
(8) For years in which residue burning and/or removal occurs no credit will be issued on the affected acreage. This includes chaff removal, straw removal/bailing.
(9) Cultivation of any kind is prohibited;
(10) Heavy harrowing including a Phoenix harrow is not permitted.

V. Offset Issuance

Offset issuance rates are as specified above for each eligible zone.

An Owner of an Exchange Soil Offset Project may be issued additional XSOs if it presents evidence that actual increases in soil carbon exceed the rates stipulated above, provided such evidence is deemed acceptable by the Committee on Offsets.

Soil Carbon Reserve Pool

Each CCX XSO Project shall be required to place 20% of the Offsets it earns into a CCX Soil Carbon Reserve Pool. Such XSOs shall remain the property of the Project Owner(s) (pool participants in the case of aggregated Projects) and all XSOs that remain in the Soil Carbon Reserve Pool shall be released to Project Owners near the end of the contract period. In the event that a Project Owner does not conform to the XSO performance requirements listed above, such event shall be promptly reported to CCX (such reporting shall occur through a Project's Aggregator if the Project is registered through an Aggregator). CCX will then cancel XSOs held in the Soil Carbon Reserve Pool in an amount equal to the quantity of XSOs previously issued to the Project.

Project Owners will be responsible for replenishing the Soil Carbon Reserve Pool by replacing the XSOs that are cancelled in instances of Project non-performance. Each previously issued XSO must be replaced with one CCX Exchange Allowance or Exchange Offset.

In the case of noncompliance with the terms and conditions for CCX Exchange Soil Offsets the owner of the noncompliant Project shall transfer to the Soil Carbon Reserve Pool (as specified below) a quantity of CCX Exchange Offsets and/or Exchange

Allowances that is equal to the total quantity of XSOs that have been issued to the Project during the years for which the contract was enrolled. The Owner of the non-performing Project shall be prohibited from further participation in CCX.

VI. Third Party Verification

Verifier entities designated by CCX shall conduct in-field inspections of enrolled XSO Projects. Such inspections shall examine field conditions, documentation of Project start dates (when applicable) and other records as specified by CCX.

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Entire State	Arkansas	Florida
Alabama	Arkansas	Baker
Delaware	Ashley	Bay
Georgia	Bradley	Bradford
Illinois	Calhoun	Calhoun
Indiana	Chicot	Clay
Iowa	Clark	Columbia
Kentucky	Clay	Dixie
Maryland	Cleveland	Duval
Mississippi	Columbia	Escambia
North Carolina	Craighead	Franklin
South Carolina	Crittenden	Gadsden
Tennessee	Cross	Gilchrist
Virginia	Dallas	Gulf
West Virginia	Desha	Hamilton
	Drew	Holmes
	Grant	Jackson
	Greene	Jefferson
	Hempstead	Lafayette
	Howard	Leon
	Jackson	Levy
	Jefferson	Liberty
	Lafayette	Madison
	Lawrence	Nassau
	Lee	Okaloosa
	Lincoln	Santa Rosa
	Little River	Suwannee
	Lonoke	Taylor
	Miller	Union
	Mississippi	Wakulla
	Monroe	Walton
	Nevada	Washington
	Ouachita	
	Phillips	
	Poinsett	
	Prairie	
	Pulaski	
	Sevier	
	St. Francis	
	Union	
	Woodruff	

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Kansas	Kansas	Louisiana
Allen	Riley	Ascension
Anderson	Saline	Assumption
Atchison	Sedgwick	Avoyelles
Bourbon	Shawnee	Beauregard
Brown	Wabaunsee	Bienville
Butler	Washington	Bossier
Chase	Wilson	Caddo
Chautauqua	Woodson	Caldwell
Cherokee	Wyandotte	Catahoula
Clay		Claiborne
Cloud		Concordia
Coffey		De Soto
Cowley		East Baton Rouge
Crawford		East Carroll
Dickinson		East Feliciana
Doniphan		Franklin
Douglas		Grant
Elk		Iberia
Ellsworth		Iberville
Franklin		Jackson
Geary		Jefferson
Greenwood		La Salle
Harvey		Lafayette
Jackson		Lincoln
Jefferson		Livingston
Johnson		Madison
Labette		Morehouse
Leavenworth		Natchitoches
Lincoln		Orleans
Linn		Ouachita
Lyon		Pointe Coupee
Marion		Rapides
Marshall		Red River
McPherson		Richland
Miami		Sabine
Montgomery		St. Charles
Morris		St. Helena
Nemaha		St. James
Neosho		St. John the Baptist
Osage		St. Landry
Ottawa		St. Martin
Pottawatomie		St. Mary
Republic		St. Tammany
Rice		Tangipahoa

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Louisiana	Michigan	Minnesota
Tensas	Allegan	Big Stone
Union	Barry	Blue Earth
Vernon	Bay	Brown
Washington	Benzie	Carver
Webster	Berrien	Chippewa
West Baton Rouge	Branch	Cottonwood
West Carroll	Calhoun	Dakota
West Feliciana	Cass	Dodge
Winn	Clinton	Douglas
	Eaton	Faribault
	Genesee	Fillmore
	Gratiot	Freeborn
	Hillsdale	Goodhue
	Huron	Grant
	Ingham	Hennepin
	Ionia	Houston
	Isabella	Jackson
	Jackson	Kandiyohi
	Kalamazoo	Lac qui Parle
	Kent	Le Sueur
	Lapeer	Lincoln
	Lenawee	Lyon
	Livingston	Martin
	Macomb	McLeod
	Manistee	Meeker
	Mason	Mower
	Mecosta	Murray
	Midland	Nicollet
	Monroe	Nobles
	Montcalm	Olmsted
	Muskegon	Pipestone
	Newaygo	Pope
	Oakland	Redwood
	Oceana	Renville
	Ottawa	Rice
	Saginaw	Rock
	Sanilac	Scott
	Shiawassee	Sibley
	St. Clair	Steele
	St. Joseph	Stevens
	Tuscola	Swift
	Van Buren	Wabasha
	Washtenaw	Waseca
	Wayne	Watonwan
		Winona
		Wright
		Yellow Medicine

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Missouri	Missouri	Nebraska
Adair	Monroe	Adams
Andrew	Montgomery	Antelope
Atchison	New Madrid	Boone
Audrain	Nodaway	Buffalo
Barton	Osage	Burt
Bates	Pemiscot	Butler
Boone	Perry	Cass
Buchanan	Pettis	Cedar
Butler	Pike	Clay
Caldwell	Platte	Colfax
Callaway	Putnam	Cuming
Cape Girardeau	Ralls	Custer
Carroll	Randolph	Dakota
Cass	Ray	Dawson
Chariton	Saline	Dixon
Clark	Schuyler	Dodge
Clay	Scotland	Douglas
Clinton	Scott	Fillmore
Cole	Shelby	Gage
Cooper	St. Charles	Greeley
Daviess	St. Louis	Hall
DeKalb	Stoddard	Hamilton
Dunklin	Sullivan	Howard
Gasconade	Vernon	Jefferson
Gentry	Warren	Johnson
Grundy	Worth	Kearney
Harrison		Lancaster
Henry		Madison
Holt		Merrick
Howard		Nance
Jackson		Nemaha
Jasper		Nuckolls
Johnson		Otoe
Knox		Pawnee
Lafayette		Phelps
Lewis		Pierce
Lincoln		Platte
Linn		Polk
Livingston		Richardson
Macon		Saline
Marion		Sarpy
Mercer		Saunders
Mississippi		Seward
Moniteau		Sherman

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Nebraska	New Jersey	Ohio
Stanton	Atlantic	Adams
Thayer	Burlington	Allen
Thurston	Camden	Ashland
Valley	Cape May	Athens
Washington	Cumberland	Auglaize
Wayne	Gloucester	Belmont
York	Hunterdon	Brown
	Mercer	Butler
	Middlesex	Carroll
	Monmouth	Champaign
	Morris	Clark
	Ocean	Clermont
	Salem	Clinton
	Somerset	Coshocton
		Crawford
		Darke
		Defiance
		Delaware
		Erie
		Fairfield
		Fayette
		Franklin
		Fulton
		Gallia
		Greene
		Guernsey
		Hamilton
		Hancock
		Hardin
		Harrison
		Henry
		Highland
		Hocking
		Holmes
		Huron
		Jackson
		Jefferson
		Knox
		Lawrence
		Licking
		Logan
		Lucas
		Madison
		Marion

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Ohio	Oklahoma	Pennsylvania
Meigs	Bryan	Adams
Mercer	Choctaw	Allegheny
Miami	Craig	Armstrong
Monroe	Mayes	Beaver
Montgomery	Muskogee	Bedford
Morgan	Nowata	Berks
Morrow	Okfuskee	Blair
Muskingum	Okmulgee	Bucks
Noble	Osage	Butler
Ottawa	Ottawa	Cambria
Paulding	Rogers	Cameron
Perry	Tulsa	Carbon
Pickaway	Wagoner	Centre
Pike	Washington	Chester
Preble		Clarion
Putnam		Clearfield
Richland		Clinton
Ross		Columbia
Sandusky		Cumberland
Scioto		Dauphin
Seneca		Delaware
Shelby		Elk
Tuscarawas		Fayette
Union		Forest
Van Wert		Franklin
Vinton		Fulton
Warren		Greene
Washington		Huntingdon
Williams		Indiana
Wood		Jefferson
Wyandot		Juniata
		Lancaster
		Lebanon
		Lehigh
		Lycoming
		McKean
		Mifflin
		Montgomery
		Montour
		Northampton
		Northumberland
		Perry
		Philadelphia
		Potter

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Pennsylvania	South Dakota	Texas
Schuylkill	Bon Homme	Anderson
Snyder	Brookings	Angelina
Somerset	Clark	Bowie
Union	Clay	Camp
Venango	Codington	Cass
Warren	Day	Cherokee
Washington	Deuel	Franklin
Westmoreland	Grant	Gregg
York	Hamlin	Harrison
	Hanson	Henderson
	Hutchinson	Houston
	Kingsbury	Jasper
	Lake	Marion
	Lincoln	Montgomery
	Marshall	Morris
	McCook	Nacogdoches
	Minnehaha	Newton
	Moody	Panola
	Roberts	Polk
	Turner	Rains
	Union	Red River
	Yankton	Rusk
		Sabine
		San Augustine
		San Jacinto
		Shelby
		Smith
		Titus
		Trinity
		Tyler
		Upshur
		Van Zandt
		Walker
		Wood

Appendix – Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Wisconsin
Buffalo
Crawford
Grant
Iowa
La Crosse
Lafayette
Monroe
Pepin
Richland
Sauk
Trempealeau
Vernon

Appendix – Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Michigan	Minnesota	Nebraska
Alcona	Aitkin	Arthur [2]
Alger	Anoka	Banner [2]
Alpena	Becker	Blaine [2]
Antrim	Beltrami	Box Butte [2]
Arenac	Benton	Boyd [2]
Baraga	Carlton	Brown [2]
Charlevoix	Cass	Cherry [2]
Cheboygan	Chisago	Dawes [2]
Chippewa	Clay	Garden [2]
Clare	Clearwater	Garfield [2]
Crawford	Cook	Grant [2]
Delta	Crow Wing	Holt [2]
Dickinson	Hubbard	Hooker [2]
Emmet	Isanti	Keya Paha [2]
Gladwin	Itasca	Kimball [2]
Gogebic	Kanabec	Knox [2]
Grand Traverse	Kittson	Logan [2]
Houghton	Koochiching	Loup [2]
Iosco	Lake	McPherson [2]
Iron	Lake of the Woods	Morrill [2]
Kalkaska	Mahnomen	Rock [2]
Keweenaw	Marshall	Scotts Bluff [2]
Lake	Mille Lacs	Sheridan [2]
Luce	Morrison	Sioux [2]
Mackinac	Norman	Thomas [2]
Marquette	Otter Tail	Wheeler [2]
Menominee	Pennington	
Missaukee	Pine	
Montmorency	Polk	
Ogemaw	Ramsey	
Ontonagon	Red Lake	
Osceola	Roseau	
Oscoda	Sherburne	
Otsego	St. Louis	
Presque Isle	Stearns	
Roscommon	Todd	
Schoolcraft	Traverse	
Wexford	Wadena	
	Washington	
	Wilkin	

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Appendix – Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

North Dakota	North Dakota	South Dakota
Adams[3]	Stark[3]	Aurora
Barnes	Steele	Beadle
Benson	Stutsman	Bennett [2]
Billings [2]	Towner	Brown
Bottineau	Traill	Brule
Bowman [2]	Walsh	Buffalo
Burke	Ward	Butte [2]
Burleigh	Wells	Campbell
Cass	Williams[3]	Charles Mix
Cavalier		Corson[3]
Dickey		Custer [2]
Divide[3]		Davison
Dunn[3]		Dewey [2]
Eddy		Douglas
Emmons		Edmunds
Foster		Fall River [2]
Golden Valley		Faulk
Grand Forks		Gregory [2]
Grant[3]		Haakon [2]
Griggs		Hand
Hettinger[3]		Harding [2]
Kidder		Hughes
LaMoure		Hyde
Logan		Jackson [2]
McHenry		Jerauld
McIntosh		Jones [2]
McKenzie		Lawrence [2]
McLean		Lyman [2]
Mercer[3]		McPherson
Morton[3]		Meade [2]
Mountrail		Mellette [2]
Nelson		Miner
Oliver[3]		Pennington [2]
Pembina		Perkins[3]
Pierce		Potter
Ramsey		Sanborn
Ransom		Shannon [2]
Renville		Spink
Richland		Stanley [2]
Rolette		Sully
Sargent		Todd [2]
Sheridan		Tripp [2]
Sioux[3]		Walworth
Slope[2]		Ziebach[3]

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Appendix – Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Wisconsin	Wisconsin
Adams	Marathon
Ashland	Marinette
Barron	Marquette
Bayfield	Menominee
Brown	Milwaukee
Burnett	Oconto
Calumet	Oneida
Chippewa	Outagamie
Clark	Ozaukee
Columbia	Pierce
Dane	Polk
Dodge	Portage
Door	Price
Douglas	Racine
Dunn	Rock
Eau Claire	Rusk
Florence	Sawyer
Fond du Lac	Shawano
Forest	Sheboygan
Green	St. Croix
Green Lake	Taylor
Iron	Vilas
Jackson	Walworth
Jefferson	Washburn
Juneau	Washington
Kenosha	Waukesha
Kewaunee	Waupaca
Langlade	Waushara
Lincoln	Winnebago
Manitowoc	Wood

Appendix – Zone C Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Montana	Wyoming
Big Horn [2]	Campbell [2]
Blaine[3]	Converse [2]
Carter [2]	Crook [2]
Cascade	Goshen [2]
Chouteau[3]	Johnson [2]
Custer [2]	Laramie [2]
Daniels[3]	Niobrara [2]
Dawson [2]	Platte [2]
Fallon [2]	Sheridan [2]
Fergus [2]	Weston [2]
Garfield [2]	
Glacier	
Golden Valley [2]	
Hill[3]	
Liberty[3]	
McCone[3]	
Musselshell [2]	
Petroleum [2]	
Phillips[3]	
Pondera[3]	
Powder River [2]	
Prairie [2]	
Richland[3]	
Roosevelt[3]	
Rosebud [2]	
Sheridan[3]	
Teton	
Toole[3]	
Treasure [2]	
Valley[3]	
Wheatland [2]	
Wibaux[3]	
Yellowstone [2]	

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Appendix – Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Colorado	Kansas	Nebraska
Adams [2]	Cheyenne [2]	Chase [2]
Arapahoe [2]	Clark [2]	Cheyenne [2]
Baca [2]	Comanche [2]	Deuel [2]
Bent [2]	Finney [2]	Dundy [2]
Cheyenne [2]	Gove [2]	Hitchcock [2]
Crowley [2]	Grant [2]	Keith [2]
Denver [2]	Greeley [2]	Lincoln [2]
Elbert [2]	Hamilton [2]	Perkins [2]
Kiowa [2]	Haskell [2]	
Kit Carson [2]	Kearny [2]	
Las Animas [2]	Lane [2]	
Lincoln [2]	Logan [2]	
Logan [2]	Meade [2]	
Morgan [2]	Morton [2]	
Otero [2]	Rawlins [2]	
Phillips [2]	Scott [2]	
Prowers [2]	Seward [2]	
Pueblo [2]	Sheridan [2]	
Sedgwick [2]	Sherman [2]	
Washington [2]	Stanton [2]	
Weld [2]	Stevens [2]	
Yuma [2]	Thomas [2]	
	Wallace [2]	
	Wichita [2]	

[2] County is within LRR G or H

Appendix – Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

New Mexico	Oklahoma	Texas
Chaves [2]	Beaver [2]	Andrews [2]
Colfax [2]	Beckham [2]	Archer [2]
Curry [2]	Caddo [2]	Armstrong [2]
De Baca [2]	Cimarron [2]	Atascosa
Eddy [2]	Comanche [2]	Bailey [2]
Guadalupe [2]	Cotton [2]	Bandera
Harding [2]	Custer [2]	Baylor [2]
Lea [2]	Dewey [2]	Bee
Lincoln [2]	Ellis [2]	Bexar
Mora [2]	Greer [2]	Blanco
Quay [2]	Harmon [2]	Borden [2]
Roosevelt [2]	Harper [2]	Briscoe [2]
San Miguel [2]	Jackson [2]	Brooks
Santa Fe [2]	Jefferson [2]	Brown [2]
Torrance [2]	Kiowa [2]	Callahan [2]
Union [2]	Roger Mills [2]	Cameron
	Stephens [2]	Carson [2]
	Texas [2]	Castro [2]
	Tillman [2]	Childress [2]
	Washita [2]	Clay [2]
	Woods [2]	Cochran [2]
	Woodward [2]	Coke [2]
		Coleman [2]
		Collingsworth [2]
		Comal
		Concho [2]
		Cottle [2]
		Crockett
		Crosby [2]
		Dallam [2]
		Dawson [2]
		Deaf Smith [2]
		DeWitt
		Dickens [2]
		Dimmit
		Donley [2]
		Duval
		Ector [2]
		Edwards
		Fisher [2]
		Floyd [2]
		Foard [2]
		Frio
		Gaines [2]
		Garza [2]

[2] County is within LRR G or H

Appendix – Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Texas	Texas
Gillespie	Mitchell [2]
Glasscock	Montague [2]
Goliad	Moore [2]
Gray [2]	Motley [2]
Hale [2]	Nolan [2]
Hall [2]	Ochiltree [2]
Hansford [2]	Oldham [2]
Hardeman [2]	Palo Pinto [2]
Hartley [2]	Parmer [2]
Haskell [2]	Potter [2]
Hays	Randall [2]
Hemphill [2]	Reagan
Hidalgo	Real
Hockley [2]	Roberts [2]
Howard [2]	Runnels [2]
Hutchinson [2]	San Saba
Irion	Schleicher
Jack [2]	Scurry [2]
Jim Hogg	Shackelford [2]
Jim Wells	Sherman [2]
Jones [2]	Starr
Karnes	Stephens [2]
Kendall	Sterling
Kenedy	Stonewall [2]
Kent [2]	Sutton
Kerr	Swisher [2]
Kimble	Taylor [2]
King [2]	Terrell
Kinney	Terry [2]
Kleberg	Throckmorton [2]
Knox [2]	Tom Green [2]
La Salle	Travis
Lamb [2]	Upton
Lipscomb [2]	Uvalde
Live Oak	Val Verde
Llano	Webb
Lubbock [2]	Wheeler [2]
Lynn [2]	Wichita [2]
Martin [2]	Wilbarger [2]
Mason	Willacy
Maverick	Williamson
McCulloch	Wilson
McMullen	Yoakum [2]
Medina	Young [2]
Menard	Zapata
Midland [2]	Zavala

[2] County is within LRR G or H

Appendix – Zone E Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Kansas	Louisiana	Nebraska
Barber [2]	Acadia	Franklin [2]
Barton [2]	Allen	Frontier [2]
Decatur [2]	Calcasieu	Furnas [2]
Edwards [2]	Cameron	Gosper [2]
Ellis [2]	Evangeline	Harlan [2]
Ford [2]	Jefferson Davis	Hayes [2]
Graham [2]	Lafourche	Red Willow [2]
Gray [2]	Plaquemines	Webster [2]
Harper [2]	St. Bernard	
Hodgeman [2]	Terrebonne	
Jewell [2]	Vermilion	
Kingman [2]		
Kiowa [2]		
Mitchell [2]		
Ness [2]		
Norton [2]		
Osborne [2]		
Pawnee [2]		
Phillips [2]		
Pratt [2]		
Reno [2]		
Rooks [2]		
Rush [2]		
Russell [2]		
Smith [2]		
Stafford [2]		
Sumner [2]		
Trego [2]		

[2] County is within LRR G or H

Appendix – Zone E Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Oklahoma	Texas	Texas
Alfalfa [2]	Aransas	Hill
Blaine [2]	Austin	Hood
Canadian [2]	Bastrop	Hopkins
Carter	Bell	Hunt
Cleveland [2]	Bosque	Jackson
Coal	Brazoria	Jefferson
Creek	Brazos	Johnson
Garfield [2]	Burleson	Kaufman
Garvin	Burnet	Lamar
Grady	Caldwell	Lampasas
Grant [2]	Calhoun	Lavaca
Johnston	Chambers	Lee
Kay [2]	Collin	Leon
Kingfisher [2]	Colorado	Liberty
Lincoln	Comanche	Limestone
Logan [2]	Cooke	Madison
Love	Coryell	Matagorda
Major [2]	Dallas	McLennan
Marshall	Delta	Milam
McClain [2]	Denton	Mills
Murray	Eastland	Navarro
Noble [2]	Ellis	Nueces
Oklahoma [2]	Erath	Orange
Pawnee [2]	Falls	Parker
Payne [2]	Fannin	Refugio
Pontotoc	Fayette	Robertson
Pottawatomie	Fort Bend	Rockwall
Seminole	Freestone	San Patricio
	Galveston	Somervell
	Gonzales	Tarrant
	Grayson	Victoria
	Grimes	Waller
	Guadalupe	Washington
	Hamilton	Wharton
	Hardin	Wise
	Harris	

[2] County is within LRR G or H

Appendix – Zone F Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Arkansas	Missouri	Oklahoma
Baxter	Barry	Adair
Benton	Benton	Atoka
Boone	Bollinger	Cherokee
Carroll	Camden	Delaware
Cleburne	Carter	Haskell
Conway	Cedar	Hughes
Crawford	Christian	Latimer
Faulkner	Crawford	Le Flore
Franklin	Dade	McCurtain
Fulton	Dallas	McIntosh
Garland	Dent	Pittsburg
Hot Spring	Douglas	Pushmataha
Independence	Franklin	Sequoyah
Izard	Greene	
Johnson	Hickory	
Logan	Howell	
Madison	Iron	
Marion	Jefferson	
Montgomery	Laclede	
Newton	Lawrence	
Perry	Madison	
Pike	Maries	
Polk	McDonald	
Pope	Miller	
Randolph	Morgan	
Saline	Newton	
Scott	Oregon	
Searcy	Ozark	
Sebastian	Phelps	
Sharp	Polk	
Stone	Pulaski	
Van Buren	Reynolds	
Washington	Ripley	
White	Shannon	
Yell	St. Clair	
	St. Francois	
	Ste. Genevieve	
	Stone	
	Taney	
	Texas	
	Washington	
	Wayne	
	Webster	
	Wright	

Appendix – Zone G Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

New York
Cayuga
Erie
Genesee
Livingston
Madison
Monroe
Montgomery
Niagara
Oneida
Onondaga
Ontario
Orleans
Oswego
Schenectady
Seneca
Wayne
Yates

CCX Agricultural Grass Soil Carbon Sequestration Offset Project Guideline

I. Introduction

Carbon is removed from the atmosphere and sequestered into soils through growth of crops and grasses. When left undisturbed in grasses, soils can accumulate carbon for several decades, with significant side benefits. CCX rules allow offsets to be earned by farmers who enroll newly-planted grasslands.

II. Applicability

This protocol applies to aggregators and producers that have enrolled in the CCX Agricultural Soil Carbon Sequestration Offset program in eligible regions of the United States and Canada. A list of eligible territories is included as the Appendix of this document. Additional regions may be added based on expert input.

IV. Eligibility

Projects involving specified agricultural soil carbon sequestration activities in designated states, counties, provinces and parishes in the U.S. and Canada shall be eligible to earn CCX Exchange Soil Offsets (XSOs) as per the rates provided for regions described below. XSOs will be issued to land managers who commit to maintain increases in soil carbon stocks realized as a result of grass cover plantings that were undertaken on or after January 1, 1999. Such grass cover must be maintained through 2010 on the acres specified upon project registration.

Zone A:

States and counties included in Zone A are provided in the appendix below. Canadian provinces of Manitoba, Saskatchewan, Alberta and British Columbia are included in Zone A.[1] Exchange Soil Offsets will be earned at a rate of 1.0 metric tons of CO_2 per acre per year to land managers who commit to maintain increases in soil carbon stocks realized as a result of grass cover plantings that were undertaken on or after January 1, 1999. Such grass cover must be maintained through 2010 on the acres specified upon project registration.

Zone B:

States and counties included in Zone B are provided in the appendix below. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons CO_2 per acre per year to land managers who commit to maintain increases in soil carbon stocks realized as a result of grass cover plantings that were undertaken on or after January 1, 1999. Such grass cover must be maintained through 2010 on the acres specified upon project registration.

V. Offset Issuance

[1] For eligible regions within Canada, please contact CCX Staff.

Offset issuance rates are as specified above for each eligible zone.

An Owner of an Exchange Soil Offset Project may be issued additional XSOs if it presents evidence that actual increases in soil carbon exceed the rates stipulated above, provided such evidence is deemed acceptable by the Committee on Offsets.

Soil Carbon Reserve Pool

Each CCX XSO Project shall be required to place 20% of the Offsets it earns into a CCX Soil Carbon Reserve Pool. Such XSOs shall remain the property of the Project Owner(s) (pool participants in the case of aggregated Projects) and all XSOs that remain in the Soil Carbon Reserve Pool shall be released to Project Owners near the end of the contract period. In the event that a Project Owner does not conform to the XSO performance requirements listed above, such event shall be promptly reported to CCX (such reporting shall occur through a Project's Aggregator if the Project is registered through an Aggregator). CCX will then cancel XSOs held in the Soil Carbon Reserve Pool in an amount equal to the quantity of XSOs previously issued to the Project.

Project Owners will be responsible for replenishing the Soil Carbon Reserve Pool by replacing the XSOs that are cancelled in instances of Project non-performance. Each previously issued XSO must be replaced with one CCX Exchange Allowance or Exchange Offset.

In the case of noncompliance with the terms and conditions for CCX Exchange Soil Offsets the owner of the noncompliant Project shall transfer to the Soil Carbon Reserve Pool (as specified below) a quantity of CCX Exchange Offsets and/or Exchange Allowances that is equal to the total quantity of XSOs that have been issued to the Project during the years for which the contract was enrolled. The Owner of the non-performing Project shall be prohibited from further participation in CCX.

VI. Third Party Verification

Verifier entities designated by CCX shall conduct in-field inspections of enrolled XSO Projects. Such inspections shall examine field conditions, documentation of Project start dates (when applicable) and other records as specified by CCX.

Appendix - **Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting**

Entire State	**Colorado**	**Colorado**
Alabama	Adams	Logan
Arkansas	Alamosa	Mineral
Connecticut	Arapahoe	Morgan
Delaware	Archuleta	Otero
Florida	Baca	Ouray
Georgia	Bent	Park
Illinois	Boulder	Phillips
Indiana	Broomfield	Pitkin
Iowa	Chaffee	Prowers
Kansas	Cheyenne	Pueblo
Kentucky	Clear Creek	Rio Grande
Louisiana	Conejos	Routt
Maine	Costilla	Saguache
Maryland	Crowley	San Juan
Massachusetts	Custer	Sedgwick
Michigan	Denver	Summit
Minnesota	Douglas	Teller
Missouri	Eagle	Washington
Montana	El Paso	Weld
Nebraska	Elbert	Yuma
New Hampshire	Fremont	
New Jersey	Garfield	
New York	Gilpin	
North Carolina	Grand	
North Dakota	Gunnison	
Ohio	Hinsdale	
Pennsylvania	Huerfano	
Rhode Island	Jackson	
South Carolina	Jefferson	
South Dakota	Kiowa	
Tennessee	Kit Carson	
Vermont	Lake	
Virginia	Larimer	
West Virginia	Las Animas	
Wisconsin	Lincoln	

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Idaho	New Mexico	Oklahoma
Adams	Colfax	Adair
Benewah	Rio Arriba	Alfalfa
Boise	Taos	Atoka
Bonner		Beaver
Boundary		Bryan
Clearwater		Canadian
Custer		Carter
Idaho		Cherokee
Kootenai		Choctaw
Shoshone		Cimarron
Valley		Cleveland
		Coal
		Craig
		Creek
		Delaware
		Garfield
		Garvin
		Grady
		Grant
		Harper
		Haskell
		Hughes
		Jefferson
		Johnston
		Kay
		Kingfisher
		Latimer
		Le Flore
		Lincoln
		Logan
		Love

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Oklahoma	Oregon	Texas
Major	Benton	Anderson
Marshall	Clackamas	Angelina
Mayes	Clatsop	Aransas
McClain	Columbia	Austin
McCurtain	Coos	Bastrop
McIntosh	Curry	Bell
Murray	Douglas	Bosque
Muskogee	Grant	Bowie
Noble	Hood River	Brazoria
Nowata	Jackson	Brazos
Okfuskee	Josephine	Burleson
Oklahoma	Lane	Burnet
Okmulgee	Lincoln	Caldwell
Osage	Linn	Calhoun
Ottawa	Marion	Camp
Pawnee	Multnomah	Cass
Payne	Polk	Chambers
Pittsburg	Tillamook	Cherokee
Pontotoc	Union	Collin
Pottawatomie	Wallowa	Colorado
Pushmataha	Washington	Comanche
Rogers	Yamhill	Cooke
Seminole		Coryell
Sequoyah		Dallas
Stephens		Delta
Texas		Denton
Tulsa		Eastland
Wagoner		Ellis
Washington		Erath
Woods		Falls
Woodward		Fannin
		Fayette
		Fort Bend
		Franklin
		Freestone
		Galveston
		Gonzales
		Grayson
		Gregg
		Grimes

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Utah
Guadalupe	Newton	Cache
Hamilton	Nueces	Carbon
Hardin	Orange	Daggett
Harris	Panola	Duchesne
Harrison	Parker	Morgan
Henderson	Polk	Rich
Hill	Rains	Summit
Hood	Red River	Utah
Hopkins	Refugio	Wasatch
Houston	Robertson	
Hunt	Rockwall	
Jackson	Rusk	
Jasper	Sabine	
Jefferson	San Augustine	
Johnson	San Jacinto	
Kaufman	San Patricio	
Lamar	Shelby	
Lampasas	Smith	
Lavaca	Somervell	
Lee	Tarrant	
Leon	Titus	
Liberty	Trinity	
Limestone	Tyler	
Madison	Upshur	
Marion	Van Zandt	
Matagorda	Victoria	
McLennan	Walker	
Milam	Waller	
Mills	Washington	
Montgomery	Wharton	
Morris	Wise	
Nacogdoches	Wood	
Navarro		

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Washington	Wyoming
Clallam	Big Horn
Clark	Campbell
Cowlitz	Converse
Ferry	Crook
Grays Harbor	Goshen
Island	Hot Springs
Jefferson	Johnson
King	Laramie
Kitsap	Lincoln
Lewis	Niobrara
Mason	Park
Pacific	Platte
Pend Oreille	Sheridan
Pierce	Sublette
San Juan	Teton
Skagit	Uinta
Skamania	Weston
Snohomish	
Stevens	
Thurston	
Wahkiakum	
Whatcom	

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Entire State	Colorado	Idaho
Arizona	Delta	Ada
California	Dolores	Bannock
Nevada	La Plata	Bear Lake
	Mesa	Bingham
	Moffat	Blaine
	Montezuma	Bonneville
	Montrose	Butte
	Rio Blanco	Camas
	San Miguel	Canyon
		Caribou
		Cassia
		Clark
		Elmore
		Franklin
		Fremont
		Gem
		Gooding
		Jefferson
		Jerome
		Latah
		Lemhi
		Lewis
		Lincoln
		Madison
		Minidoka
		Nez Perce
		Oneida
		Owyhee
		Payette
		Power
		Teton
		Twin Falls
		Washington

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

New Mexico	Oklahoma	Oregon
Bernalillo	Beckham	Baker
Catron	Blaine	Crook
Chaves	Caddo	Deschutes
Cibola	Comanche	Gilliam
Curry	Cotton	Harney
De Baca	Custer	Jefferson
Dona Ana	Dewey	Klamath
Eddy	Ellis	Lake
Grant	Greer	Malheur
Guadalupe	Harmon	Morrow
Harding	Jackson	Sherman
Hidalgo	Kiowa	Umatilla
Lea	Rogers Mills	Wasco
Lincoln	Tillman	Wheeler
Los Alamos	Washita	
Luna		
McKinley		
Mora		
Otero		
Quay		
Roosevelt		
San Juan		
San Miguel		
Sandoval		
Santa Fe		
Sierra		
Socorro		
Torrance		
Union		
Valencia		

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Texas
Andrews	Culberson	Hockley
Archer	Dallam	Howard
Armstrong	Dawson	Hudspeth
Atascosa	Deaf Smith	Hutchinson
Bailey	DeWitt	Irion
Bandera	Dickens	Jack
Baylor	Dimmit	Jeff Davis
Bee	Donley	Jim Hogg
Bexar	Duval	Jim Wells
Blanco	Ector	Jones
Borden	Edwards	Karnes
Bowie	El Paso	Kendall
Brewster	Fisher	Kenedy
Briscoe	Floyd	Kent
Brooks	Foard	Kerr
Brown	Frio	Kimble
Callahan	Gaines	King
Cameron	Garza	Kinney
Carson	Gillespie	Kleberg
Castro	Glasscock	Knox
Childress	Goliad	La Salle
Clay	Gray	Lamb
Cochran	Grimes	Lipscomb
Coke	Hale	Live Oak
Coleman	Hall	Llano
Collingsworth	Hansford	Loving
Comal	Hardeman	Lubbock
Concho	Hartley	Lynn
Cottle	Haskell	Martin
Crane	Hays	Mason
Crockett	Hemphill	Maverick
Crosby	Hidalgo	McCulloch

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Utah
McMullen	Starr	Beaver
Medina	Stephens	Box Elder
Menard	Sterling	Davis
Midland	Stonewall	Emery
Mitchell	Sutton	Garfield
Montague	Swisher	Grand
Moore	Taylor	Iron
Motley	Terrell	Juab
Nolan	Terry	Kane
Ochiltree	Throckmorton	Millard
Oldham	Tom Green	Piute
Palo Pinto	Travis	Salt Lake
Parmer	Upton	San Juan
Pecos	Uvalde	Sanpete
Potter	Val Verde	Sevier
Presidio	Ward	Tooele
Randall	Webb	Uintah
Reagan	Wheeler	Washington
Real	Wichita	Wayne
Reeves	Wilbarger	Weber
Roberts	Willacy	
Runnels	Williamson	
Sabine	Wilson	
San Saba	Winkler	
Schleicher	Yoakum	
Scurry	Young	
Shackelford	Zapata	
Sherman	Zavala	

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Washington	Wyoming
Adams	Albany
Asotin	Carbon
Benton	Fremont
Chelan	Natrona
Columbia	Sweetwater
Douglas	Washakie
Franklin	
Garfield	
Grant	
Kittitas	
Klickitat	
Lincoln	
Okanogan	
Spokane	
Walla Walla	
Whitman	
Yakima	

Appendix C

The following is a sample listing of the frequency of various educational outreach seminars that are attended by Chicago Climate Exchange and the enrolled aggregators on a regular basis.

Jan-08	AFBF Annual Meeting
Jan 9 - 12	National No-till Conference
1/22/07	Tri-State No-Till Conference
Jan 24-25	Wisconsin Corn/Soy Expo
January 26 - 31	Society of Range Management annual meeting
Jan 29 - 30	No-till on the Plains
1/26/07	Kansas YF & Ranchers
Jan	South Dakota No-Till Conference
Feb 5-6	High Plains No-Till Conference
Feb 8-9	KNEB Farm Show
Feb 5-6	Midwest Ag Energy Network
Feb 6 - 9	Cattle Industry Annual Convention and NCBA trade Show
Feb 11 - 13	Oklahoma No-Till Conference
Feb 22 & 23	Conservation Tillage and Technology Conference
Feb 28 - Mar 1	Commodity Classic
Mar 3rd	Associate Aggregator Presentation
March 8th	Woodland Owners Conference
Mar-08	Spring Conservation bazaar
Mar 17-20	Associate Aggregator Presentations
Mar 17-19	DFA Annual meeting
March 28th	Assoc. of Consulting Foresters
April1-3	Mississippi Society of American Foresters conference
April 8-11	National Forest Landowners Conference
May	CCX Annual Meeting
May	Texas Carbon mtg
May 7-9, 2008	3I Show
May	Alabama Carbon mtg
June 5 - 7	World Pork Expo
Jun-08	ICA Summer Conf
6/11/2008	Farm Managers Assoc
6/21/2008	Arkansas Landowners Conference
June 29 - July 2	ASABE Annual International Meeting
June	Tulare Farm Show
July 26 - 30	Soil and Water Conservation Society
Aug 26-28	Farm Progress Show
Sep 9 - 11th	Husker Farm Days
Aug	Dakota Fest
Sep 4th & 5th	Renewables on Parade
Sep 13 & 14th	Iowa Energy Expo
Sep	Texas Carbon Credit Conference
Oct	Texas Forestry Association conference
Oct	Mississippi Forestry Association conference
Oct 11- 14	National Tree Farm Conference
Oct 16 - 18	Sunbelt Ag Expo
Dec-07	Midwest Ag Energy Network

Chicago Climate Exchange

Soil Carbon Management Offsets

Introduction

Chicago Climate Exchange® (CCX®) is the world's first and North America's only active voluntary, legally binding integrated trading system to reduce emissions of all six greenhouse gases (GHGs), with offset projects worldwide. CCX employs independent verification and has been trading GHG emission reductions since 2003. CCX Members that cannot reduce their own emissions can purchase credits from those who make extra emission cuts or from verified offset projects.

CCX issues tradable Carbon Financial Instrument® (CFI™) contracts to owners or aggregators of eligible projects on the basis of sequestration, destruction or displacement of GHG emissions. Eligible projects include: agricultural methane, landfill methane, coal mine methane, agricultural and rangeland soil carbon, forestry and renewable energy.

- New income source
- Reward sustainable farming
- Improve environmental quality

Basic CCX Specifications for Soil Carbon Management Offset Projects: Conservation Tillage

- Minimum five year contractual commitment to continuous no-till or strip-till (conservation tillage) on enrolled acres.
- Tillage practice must leave at least two-thirds of the soil surface undisturbed and at least two-thirds of the residue remaining on the field surface.
- CCX CFI contracts are issued for conservation tillage at a rate between 0.2 and 0.6 metric tons CO_2 per acre per year.
- Carbon sequestration projects must be enrolled through a CCX-registered Offset Aggregator.
- All projects subject to independent verification.

CCX has developed simple, standardized rules for issuing credits for agricultural carbon emission reductions and soil sequestration.

Eligible projects include:

- Methane capture and combustion
- Continuous no-till and strip-till cropping in the U.S. and Canada
- Grass planting
- Tree planting
- Improved rangeland management

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Chicago Climate Exchange

Frequently Asked Questions About CCX Conservation and Grassland Soil Carbon Offsets

What are CCX soil carbon offsets?

Soil carbon offsets are projects involving sequestration of carbon in soil resulting from the adoption of conservation tillage and activities in designated states, counties and parishes in the U.S. and Canada.

What is the per acre offset issuance rate?

Soil carbon offsets are issued on a per acre per year basis. The offset issuance rate depends on the region in which the practice is being undertaken. For instance, enrolled producers in Illinois may be issued offsets at a rate of 0.6 metric tons of CO_2 per acre per year and producers in central Kansas may be issued offsets at a rate of 0.4 metric tons CO_2 per acre per year. The different offset issuance rates reflect the carbon sequestration ability of the soils. For eligible regions, contact CCX staff.

What is conservation tillage?

For the purpose of CCX conservation tillage is as defined in the Natural Resources Conservation Service National Handbook of Conservation Practices. These definitions are: No-till/strip-till – managing the amount, orientation, and distribution of crop and other plant residue on the surface year-round while growing crops in narrow slots or tilled or residue free strips in soil previously untilled by full width inversion implement.

How do CCX rules address the risk of carbon storage reversal?

In order to preemptively address the risk that CO_2 removed from the air through CCX-eligible sequestration practices might be released by a reversal (e.g., due to failure to maintain the contracted soil management practices), each year 20% of the CFI contracts generated through these practices is placed into a reserve pool. To compensate for any carbon storage reversal, CCX will cancel CFI contracts in the set-aside pool in an amount corresponding to the CO_2 tonnage loss resulting from the reversal. If a project owner fails to conform to the practices specified in its CCX contract, continued participation in CCX by that land owner is disallowed.

What is the role of an Offset Aggregator?

An Offset Aggregator is a CCX-registered entity that serves as an administrative and trading representative on behalf of multiple individual participants. A list of Aggregators can be found on the CCX website.

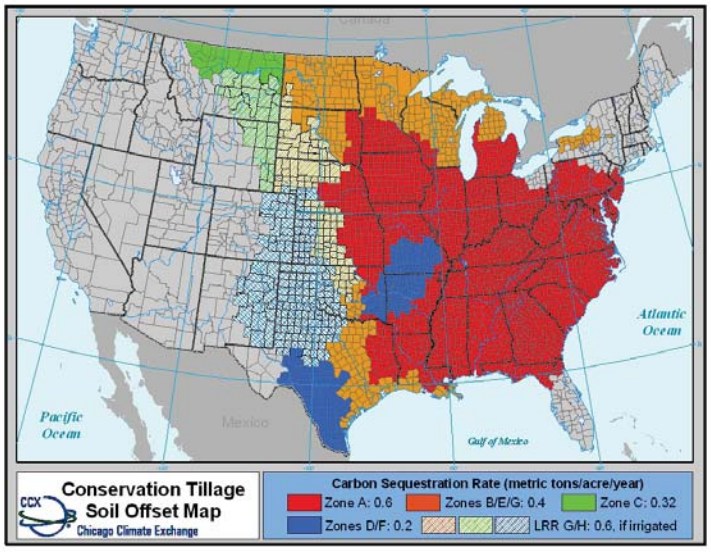
What is the role of an independent third party verifier?

At least once a year an independent CCX authorized verifier will conduct in-field inspections on a portion of the enrolled acres to ensure that the conservation farming practices being applied are in accordance with the CCX protocols.

How much money will I receive for my soil offsets?

Prices have ranged from below $1 to above $5 per metric ton. Daily volumes since January 2007 have averaged in excess of 100,000 metric tons. Prices may vary according to market conditions. To view historical transaction data please visit the CCX website.

No-till Rates and Eligible Regions*



*Additional regions may be added based on expert input.

Overview and Frequently Asked Questions

Chicago Climate Exchange™ Offsets for Carbon Capture and Storage in Agricultural Soils

Agricultural Soils Summary

- Continuous conservation tillage on U.S. and Canadian farms is a rare, best-in-class practice that moves carbon dioxide from the atmosphere to the soil.

- Continuous conservation tillage helps improve soil and water quality, reduces on-farm fuel burn and emissions, and also enhances the ability of food producers to withstand climate extremes.

- Management practices that allow soils to move carbon dioxide from the atmosphere to agricultural soils are explicitly cited as an important GHG mitigation option in the United Nations Framework Convention on Climate Change (UNFCCC), in the Kyoto Protocol to the UNFCCC, and in the most recent report of the Intergovernmental Panel on Climate Change.

- Activities that increase on-farm soil carbon are explicitly included as credited activities in U.S. proposals to legislate a GHG cap-and-trade program, for both early action and inclusion going forward. Agricultural soil carbon crediting is also included in existing Canadian GHG reduction initiatives.

- All CCX projects are subject to independent third-party onsite verification. Enrolled farmers have met their contractual commitments.

- CCX rules require farmers to sign contracts committing them to five years of continuous conservation tillage on the enrolled plots. To address the possibility of reversal of carbon storage, CCX requires 20% of all earned Offsets to be placed into an insurance-like reserve. That mechanism provides a tool to facilitate an immediate accounting that would be needed to remediate any carbon loss. To date, reversals have not been material.

Offsets Summary

- Inclusion of Offset projects in the CCX™ market helps foster a broad array of win-win and cost-effective climate solutions.

- In 2007 the Intergovernmental Panel on Climate Change ("IPCC") identified approximately three dozen currently viable GHG mitigation actions. A majority of these actions are appropriately implemented via a project-based Offsets approach.

- Every CCX offset project advances a mitigation action identified by the IPCC as currently viable.

- The following principles used to define eligible projects and determine the quantity of tradable Offsets issued:
    - To qualify, a projects must be beyond regulation, recently implemented, or as applicable, best-in-class
    - Conservative crediting
    - Independent verification by expert entities
    - Reserve pools for sequestration performance assurance
    - All Carbon Financial Instrument® contracts(i.e. CCX Allowances and CCX Offsets) are equivalent when surrendered for compliance

- The CCX principle of using standardized rules for defining eligible projects and quantifying project crediting is becoming widely adopted in programs across North America.

- To assure quality and legitimacy of Offsets transacted in CCX, CCX rules require an independent verification report on project eligibility and effectiveness before the exchange will issue Offsets to the Member's CCX Registry account.

- To ensure that Offset Projects enrolled in CCX have not "double sold" credits by selling in both CCX and elsewhere CCX uses a unique serial number system in the CCX Registry and requires appropriate contractual provisions for project enrolled in CCX.

- CCX rules are designed to assure overall environmental progress and prevent "cherry picking". Any entity that seeks to register CCX Offsets that also has significant GHG emissions at its own facilities can be eligible to earn Offsets only if makes the CCX legally binding commitment to manage its facility emissions under the CCX Emission Reduction Schedule.

CCX Overview

Chicago Climate Exchange ("CCX") is an international rules-based greenhouse gas emission reduction, audit, registry and trading program based in the U.S. Launched as a pilot program in 2003, the market now includes over 350 entities. CCX participants in the industrial,

governmental and academic sectors execute legally binding commitments to meet annual emission reduction goals of 4% below baseline for 2006 and 6% below baseline by 2010.[1] CCX rules require that all emission baselines, annual reduction commitments and Offset projects are annually subjected to independent audit by authorized experts.

As of this writing, the total included baseline emissions of Chicago Climate Exchange members is in excess of 500 million metric tons CO_2. No country in the world has as much industrial emissions under a legally binding GHG emission reduction commitment.

Every active or proposed GHG cap-and-trade program worldwide includes a role for project-based emission reduction credits - "Offsets". Offsets are tradable credits produced by implementing mitigation projects in sectors not covered by the emissions cap. Every GHG mitigation project enrolled in CCX must meet eligibility standards and undergo independent verification before it can be issued tradeable Offsets in the CCX Registry.

Achieving the goals of Chicago Climate Exchange on a scale with global significance meant it was necessary to move beyond debate and set credible and practical standards for project-based crediting. Offset projects enrolled in CCX produce multiple social, economic and ecological co-benefits. The participation of Offset providers in CCX broadens market participation, and the carbon price produced by the CCX market rewards innovation and efficiency, and encourages investment and risk taking that stimulates development of superior environmental technologies.

It is noteworthy that as various proposals to activate carbon markets emerge around North America, the CCX principle of applying standardized, predictable rules for defining Offsets, and, as well, the specific CCX definitions of eligible projects, are becoming widely accepted practice.

U.S. legislative proposals for limiting greenhouse gases call for major reductions in net emissions in the coming decades. The stringency of the proposed rules warrant the deployment of every possible mitigation option to achieve the legislated targets and to effect the needed scale of global emissions mitigation. Most of the currently viable GHG mitigation options identified by the Intergovernmental Panel on Climate Change can be fully implemented only if a robust and diverse program for engaging project-based mitigation is developed. CCX rules serve to proactively engage many of these diverse mitigation options, thereby advancing global environmental objectives.

The remainder of this document provides a description of the rules, rationale and experience with Offsets in CCX. Details on CCX rules for specific GHG mitigation projects are found elsewhere on this website.

[1] CCX core rules are found at: http://www.chicagoclimateexchange.com/about/pdf/ChicagoAccord_050623.pdf

Frequently asked questions about CCX Offsets for Carbon Capture and Storage in Agricultural Soils

Q: Do the existing scientific guidance and policy structures support use of agricultural soils management as an effective greenhouse gas mitigation strategy?

A: Yes. Management practices that allow soils to move carbon dioxide from the atmosphere (where it causes harm) to agricultural soils (where carbon improves soil health) are explicitly cited as an important GHG mitigation option in the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol to the UNFCCC, and the most recent report of the Intergovernmental Panel on Climate Change (IPCC). (see *Appendix 1* below). Soils management to capture carbon is also one of the "Stabilization Wedges" articulated by Pacala and Socolow.[2]

Proposals to establish a U.S. GHG cap-and-trade program, including the proposed Bingaman-Specter bill and the proposed Lieberman-Warner bill, contain explicit provisions to include and credit agricultural management practices that result in capture of atmospheric carbon dioxide in soils.

In Canada, the first provincial-level carbon reduction and trading program (in Alberta) explicitly includes crediting for agricultural soil carbon projects. The government of Saskatchewan targets increased soil carbon capture as one of its five core GHG mitigation strategies.[3]

Q: How does CCX establish the standards, definitions and crediting rates for agricultural Offset projects?

A: Because the CCX development phase was an open process which accepted input from all who sought participation, CCX rules reflect the input of literally hundreds of individual experts. Specific expertise that guides the rules for agricultural Offsets is assembled via a Technical Advisory Committee (see *Appendix 2* below) comprised of leading experts from the academic soils science community. That Committee incorporated input from professionals employed in farming, from U.S. government agencies and from verification firms. All recommendations developed by the Technical Advisory Committee are considered for approval by the standing CCX Offsets Committee. (Information on crediting rates can be found at: http://www.chicagoclimateexchange.com/content.jsf?id=781).

[2] Pacala, S. and Socolow, R., "Stabilization Wedges: Solving the Climate Problem for the next 50 Years with Current Technologies" Science, August 13, 2004 http://www.princeton.edu/~cmi/resources/stabwedge.htm

[3] http://www.saskatchewan.ca/Default.aspx?DN=b92e42b6-6ab2-448a-a8d7-f698cad62eec

Q: What is the relative scale of agricultural Offsets compared to overall environmental progress being realized by CCX members?

A: To date the quantity of project-based Offsets enrolled in CCX has been modest compared to overall scale of emission reductions realized by CCX Members. During CCX Phase 1 (2003 through 2006) internal emission reductions realized at the industrial sites included in CCX commitments accounted for approximately 90% of total verified emission reductions. Total Offsets enrolled have accounted for approximately 10% of total verified emission reductions, with all agricultural Offsets (including soils management, on-farm reforestation, agricultural methane capture) representing around half of all Offsets.

Q: Does provision of global environmental services by agriculture through GHG mitigation hold significant potential for economic opportunity and rural development?

A: Yes. While agriculture likely will continue to be a modest part of the total share of the total GHG mitigation portfolio, the economic potential is significant. Estimates suggest that contribution of a full suite of agricultural GHG mitigation options raise net farm income by 10% or more, while helping reduce income variability and enhancing the ability to adapt to climate change.

Q: What is the carbon sequestration baseline for these projects?

A: The baseline implicit under these rules is that carbon stocks on included soils would be neither rising nor falling, but stable, if the predominant North American practices of conventional tillage or non-continuous conservation tillage was being used.

Q: What is the project "boundary" for these projects?

A: The project boundary is confined to the cropped fields that are subject to continuous conservation tillage. Offset issuance for these projects is based entirely on the soil carbon absorption rate. Conservation tillage farming practices very likely emit less – possibly far less - fuel-related carbon dioxide emissions due to reduced tractor usage. Ongoing research suggests that conservation tillage also reduces the potential for conversion of nitrogen-based nutrients to nitrous oxide emissions.

Q: Do the rules for calculating offsets by region assume that each enrolled acre realizes that quantity of carbon dioxide capture each year?

A: No. The standard rates are based on the average accumulation rates expected for large pools of farmland over multiple years based on the best available scientific information.

The issuance rates are viewed as a discounted average that could be expected to occur for the entire pool of enrolled acreage over the five-year contract period.

Q: Is no-tilled farmland likely to stay no-till after the CCX contract period? What would happen to accumulated soil carbon if the farmland is tilled subsequent to the end of the contract?

A: Research evidence strongly suggests that farmers who successfully navigate the management changes involved in going from conventional to conservation tillage will stay with the new practice after a three to six year transition period. Farmers enrolled in the program have no contractual commitment subsequent to the end of their contracts. The potential for release of accumulated soil carbon back to the atmosphere depends, among other variables, on the intensity and frequency of soil disturbing tillage practices, should those occur post-contract. Intensive tillage year after year would, if adopted, result in considerable loss, while occasional and/or low-intensity practices would lead to less loss of previously accumulated soil carbon.

Q; In setting Offset rules based on "performance standards", why is continuous conservation tillage considered a best-in-class activity?

A: Because it is a very rare practice that produces carbon benefits as well as several other important ecological benefits. Somewhere between 5% and 10% of U.S. farmland is manage under *continuous* conservation tillage. While the occasional use of conservation tillage is more widespread, only continuous conservation tillage (i.e. year after year on the same planted acres) is eligible to earn Offsets under CCX rules. Only continuous conservation tillage is eligible as that practice keeps the captured atmospheric carbon in the soil.

Q: On a quantitative scale, is the amount of carbon now being captured and stored as a result of continuous conservation tillage a relatively large phenomenon?

A: No. Using the estimate that only 7.5% of suitable land is currently managed using *continuous* conservation tillage, (18.75 million acres out of a possible 250 million acres of suitable US cropland), and assuming an annual mitigation service provision of 0.5 metric tons CO_2 per acre per years, ongoing CO_2 mitigation would amount to 9.375 million metric tons of CO_2 removal per year. This amount represents approximately .13% of annual U.S. GHG emissions.

Q: Why does CCX **not** issue carbon Offsets for the fact that low/no-tillers use far less energy than the average farmer?

A: As part of CCX's philosophy of keeping Offset rules simple and conservative, it was decided to keep the focus on the soil carbon practices only. That said, the lower fuel-based emissions footprint of low and no-tillers is an acknowledged co-benefit.

Q: Do CCX and other programs discriminate against early actors?

A: No. CCX and the other existing or proposed programs that incorporate soil carbon sequestration (e.g. Alberta's carbon market, legislation proposed in the U.S. Senate via S. 317,[4] and the Pacific Northwest Direct Seed Association project) do *not* prohibit crediting for farmers who may have started the rare practice of continuous conservation tillage prior to the program start date.

There is a clear scientific consensus that U.S. and Canadian farmland can continue to remove and store carbon from atmosphere for more than thirty years after continuous low or no-till is adopted. The question of whether farmers would have otherwise done conservation tillage even without credit is more complex than some make it out to be. First consider the practical effect of allowing Offsets *only* to those who "convert". Such a rule would encourage gaming that encourages application of high-disturbance plowing of fields that have been subject to conservation tillage in the past in order to make them "normal heavy till" acres that qualify for conversion. This would result in a potentially large loss of stored carbon to the air, before that land is returned to its previously ongoing carbon removal condition. Further, there would be very negative equity, precedent and policy signaling considerations from a rule that precludes early actors from realizing credit for the mitigation services they provide. Finally, taking such earned environmental service credits from farmers would amount to nationalizing their asset – which can be expected to lead to either sabotage or severe undermaintenance of the asset by its before-seizure owner.

Q: How does CCX address the issue of permanence (i.e. long-term retention of the removed carbon in a stored status).

A: Through a 100% payback mechanism. CCX rules require farmers to sign contracts calling for five years of continuous conservation tillage on the enrolled plots. CCX requires 20% of all earned Offsets to be placed into an insurance-like reserve pool. In the case of farmer non-performance, the quantity of all historic Offsets issued to the non-performing land will be cancelled in the reserve account, leaving a smaller quantity to be returned to the aggregator once the contract period is completed.

[4] The Electric Utility Cap-and-Trade Act, sponsored by Senator Feinstein (D-CA) and Senator Carper (D-DE).

Q: What have been the main findings resulting from field compliance inspections?

A: The compliance inspections conducted by independent experts hired by CCX, have found that enrolled farmers have complied with their contractual commitments. Errors that have been detected have tended to involve imprecision in the included acres reported by the farmer (with cases of both under and overreporting), which have been detected in one to two percent of inspected sites. Enrollment contracts are adjusted in such cases, as is Offset issuance (including corrections for any historic mis-issuance).

Q: What action is CCX taking to enhance knowledge and data on soil carbon accumulation rates?

A: CCX, with support funding from the U.S. Department of Agriculture/Natural Resources Conservation Service, has contracted to have a series of soil samples and assessments conducted to benchmark the actual soil carbon accumulation rates realized at a randomly selected set of included fields. In the coming years the initial samples will be compared with post-conservation tillage samples to provide an additional contribution the already substantial scientific literature on this issue.

Q: Are there more details on the significance of the environmental co-benefits, beyond carbon capture, that conservation tillage provides?

A: Yes. There is extensive literature on the important co-benefits that make conservation tillage attractive for both its carbon mitigation services and its local ecological benefits. As reported by Towery (undated)[5] the benefits have multiple dimensions:

> *The improved soil properties associated with no-till/strip-till also brings benefits to society. Water quality in rivers, lakes and streams is improved as there is less soil erosion and sedimentation, runoff is reduced, phosphorus movement is reduced, and pesticides degrade quicker and are less likely to find their way into waterways. Reducing or eliminating runoff and the associated non-point pollutants is a major advantage for no-till/strip-till as compared to conventional tillage. Although results will vary depending on soil type, crop rotation, length of time in no-till/strip-till, and rainfall intensity, typically the following changes will apply with no-till/strip-till:*
>
> *Reduced run-off by 75 percent;*
>
> *Reduced sediment loss by 98 percent;*
>
> *Reduced nitrogen fertilizer losses in run-off by 95 percent;*
>
> *Reduced phosphorus run-off by 92 percent;*
>
> *Reduced pesticide losses by 80 percent.*
>
> *If no-till/strip-till is used by most farmers in a watershed along with needed conservation buffers, pollutants typically associated with conventional agriculture will be drastically*

[5] "Continuous No-till – How It Pays Everyone from the Farm to the City", Towery, Dan http://www.uga.edu/water/GWRC/Papers/ToweryDan%20Paper%20March288.pdf

reduced or eliminated. Water quality will improve and those involved in fishing, swimming and boating will have a better experience as they enjoy these recreational opportunities. Changes in water quality may even attract visitors by improving the water resources for boating, fishing, eco-tourism and other means to enjoy the outdoors.

Leaving crop residue on the soil's surface and planting cover crops also benefits wildlife. Both game species, such as quail, and non-game species have improved habitat which may increase wildlife numbers if other critical items are present. This can provide increased opportunities for ag and urban hunters and for non-hunting activities such as bird watching.

Evans, *et. al.* note[6]:

"*The 30 percent soil cover that is achieved by conservation tillage is significant to reducing soil erosion by 50 percent or more compared to bare soil. Soil erosion and runoff are considered by volume the greatest contaminant of surface water in most Indiana watersheds."*

"Given that most research suggests the no-till benefits to soil physical property characteristics begin to appear no earlier than the third year of continuous no-till, it appears most farmers are abandoning notill at about the time that one would expect to reap the soil physical property benefits associated with no-till. These benefits, over time, include but are not limited to improved infiltration, reduced runoff, increased earthworm activity, improved structure or tilth, and increased organic matter content. Current farm policy does not reward farmers who use no-till, or for that matter any other method of conservation tillage."

"Certainly farmers have not given conservation tillage—especially no-till— the "continuous" time necessary to reap yield and economic benefits."

"Perhaps a program to entice farmers to stay with no-till longer term could benefit both farmers and society in general."

[6] CONSERVATION TILLAGE UPDATE: *Keeping Soil Covered and Water Clean in the New Millennium* Data Update from Indiana's Clean Water Indiana Cropland Transect Surveys, *M.G. Evans, K.J. Eck, B. Gauck, J.M. Krejci, J.E. Lake, and E.A. Matzat, November, 2000 No. 1* Clean Water Indiana Education Program Purdue University, Agronomy Department http://www.agry.purdue.edu/swq/images/tillage.pdf

Appendix 1 References to Inclusion of Agricultural Soils Management as a GHG Mitigation in the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol to the UNFCCC, and the Intergovernmental Panel on Climate Change (IPCC) *(emphasis added)*

United Nations Framework Convention On Climate Change, United Nations, 1992,
(http://unfccc.int/resource/docs/convkp/conveng.pdf)

Article 3, section 3:
"The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.

Article 4
1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall: ….

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;
…
(d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;

2. The developed country Parties and other Parties included in Annex I commit themselves specifically as provided for in the following: (a) Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs.

Kyoto Protocol To The United Nations Framework Convention On Climate Change, United Nations, 1998
(http://unfccc.int/resource/docs/convkp/kpeng.pdf)

Article 2
1. Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

(a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:

…..
(ii) Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol…..

(iii) Promotion of sustainable forms of agriculture in light of climate change considerations;

IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate*

(http://www.ipcc.ch/SPM040507.pdf)

14. Agricultural practices collectively can make a significant contribution at low cost to increasing soil carbon sinks, to GHG emission reductions, and by contributing biomass feedstocks for energy use…..

• A large proportion of the mitigation potential of agriculture (excluding bioenergy) arises from soil carbon sequestration, which has strong synergies with sustainable agriculture and generally reduces vulnerability to climate change [8.4, 8.5, 8.8].

Table SPM.3: Key mitigation technologies and practices currently commercially available

Agriculture:	Improved crop and grazing land management to increase soil carbon storage; restoration of cultivated peaty soils and degraded lands; improved rice cultivation techniques and livestock and manure management to reduce CH4 emissions; improved nitrogen fertilizer application techniques to reduce N2O emissions; dedicated energy crops to replace fossil fuel use; improved energy efficiency.

Policies measures and instruments shown to be environmentally effective

Financial incentives and regulations for improved land management, maintaining soil carbon content, efficient use of fertilizers and irrigation

Appendix 2 Members of the CCX Soil Carbon Technical Advisory Committee

Dr. Alan Franzluebber	Ecologist, Agricultural Research Service, USDA
Dr. Charles Rice	Professor, Department of Agronomy, Kansas State University
Dr. Keith Paustian	Professor of Soil Ecology, Department of Soil and Crop Sciences Colorado State University
Dr.Rattan Lal	Senior Research Scientist Natural Resources Ecology Laboratory Colorado State University Professor, School of Natural Resources, Food, Agricultural and Environmental Science Ohio State University Director, Carbon Management and Sequestration Center and Ohio Research and Development Center Ohio State University
Dr. Mark Liebig	Soil Scientist, Agricultural Research Service, USDA
Dr. Lee Burras	Associate Professor and Pioneer Hi-Bred Professor of Agronomy Iowa State University
Dr. Sjoerd Willem Duiker	Assistant Professor, Department of Soil and Crop Sciences Pennsylvania State University
Dr. Mark Alley	W.G. Wysor Professor, Department of Crop and Soil Environmental Sciences Virginia Polytechnic Institute and State University
Dr. John Grove	Associate Professor, College of Agriculture University of Kentucky

Appendix D

CHICAGO CLIMATE EXCHANGE

SOIL CARBON OFFSET VERIFIER MANUAL

Table of Contents

1 Introduction

The Chicago Climate Exchange (CCX or the Exchange) is North America's only, and the world's first, legally binding multi-sector, rules-based and integrated greenhouse gas (GHG) emission registry, reduction and trading system. CCX employs independent verification and includes all six GHGs. CCX Members include corporations such as Ford, DuPont, International Paper and IBM; utilities such as American Electric Power, Tampa Electric and Central Vermont Public Service; academic institutions such as the University of Iowa and the University of Minnesota; non-governmental organizations such as World Resources Institute and Rocky Mountain Institute; public-sector entities such as the City of Chicago and the State of New Mexico.

CCX Members with direct emissions of greenhouse gases make a voluntary but legally binding commitment to reduce those emissions over time, in accordance with the CCX emission reduction schedule and rules. All Members will have reduced direct emissions 4% below a baseline period of 1998-2001 by the end of Phase I in December of 2006. Phase II, which extends the CCX reduction program through 2010, will require all Members to reduce greenhouse gas emissions 6% below baseline. Members that cannot reduce emissions internally must purchase Carbon Financial Instruments (CFI) contracts from other Members who make excess emission cuts, or from registered Offset Projects.

Verification is the procedure through which the physical occurrence of soil carbon sequestration claimed by an Offset Provider or Aggregator is confirmed by a third party through application of CCX protocol and direct, in-field adherence to specified eligible practices. An enrolled offset project must be verified, and the verification report must be approved before the project is issued CCX Carbon Financial Instrument contracts. Verification must take place at least annually for each contract pool. This manual shall provide further information on:

A. CCX-approved Verifiers
B. The verification process for soil carbon sequestration
C. The verification report and CCX review of the report

2 CCX-Approved Verifiers

Verification must be conducted by a CCX-approved verifier. These verifiers have demonstrated to CCX their technical expertise in performing verification services for specific CCX Offset project types as well as the absence of any project-related conflicts of interest. Before performing any verification work, the verifier will also be required to submit project-specific statements of conflicts of interest. The eligibility criteria for entities interested in becoming a CCX-approved Verifier are:

- Applicants shall have been in existence for at least four years and shall be in good standing under the laws of its jurisdiction of organization.
- Applicants shall have at least two years experience in greenhouse gas measurement, monitoring, verification or related activities.
- There shall not be any pending judicial process for malpractice, fraud and/or other activity incompatible with your functions as a CCX-Approved Verifier.
- Your organization shall have net worth of at least $1 million and carry **professional liability** (a.k.a. errors and omissions insurance) insurance coverage of at least $2 million applicable to your work as a CCX-Approved Verifier, including the valuation of any offset project and resulting issuance of Carbon Financial Instruments.
- All verification reports are subject to audit by the NASD. All CCX-Approved Verifiers must provide full cooperation to the NASD in its exercise of this audit function.

A listing of existing verifiers, including contact information, is available in the Offsets section of the CCX website (www.chicagoclimateexchange.com). If you currently work with a firm you think would qualify as a CCX Verifier for your project, please refer them to the program. The Exchange is always looking for additional qualified verifiers to keep the services cost-competitive and to handle additional verification work. The general and project-specific Verifier statements of conflicts of interest and application form are included as an appendix to this manual.

3.1 Conservation Tillage Verification

Introduction

The following procedure has been developed to provide guidance for confirming conservation tillage practices implemented as per agreement and contracted between landowners/farmers and the Chicago Climate Exchange (CCX). The purpose of the verification protocol is to confirm that no-till and minimum-till crop production systems have been implemented for the purposes of capturing (sequestering) atmospheric carbon through photosynthesis during crop growth, and allowing crop residue to remain on and in the soil, wherein the vegetative matter will decompose to stable organic carbon.

No-till farming is defined as leaving the soil undisturbed from harvest to planting, **except for strips of less than 30 percent of the row width** (strips may involve only residue disturbance or may include soil disturbance). Planting or drilling is accomplished in a narrow seedbed or slot created by disk openers. In a properly designed no-till system, crop residues from previous years are left on the soil surface, and root systems from previous crops are left to decay in the soil, thereby maintaining or increasing the organic carbon content of the soil. No-till practices can be verified through confirmation of plant residues left on the soil surface from previous years and also evidence that the soil has not been significantly turned, mixed or disrupted.

All data collected during the verification process will be entered onto a standardized form that will be used as the contract verification record. Each form must be filled out, completed and signed by the field verification specialist conducting the verification process.

1. Contract Selection Process–Sampling Requirements

The aggregator provides the verifier with a database or electronic spreadsheet that contains all the contracts enrolled in a "Pool" of contracts. The objective of the verification is to inspect a minimum of 10 percent of the contracts each year, which also should comprise a minimum of 10 percent of the enrolled acreage. To select the verification acres, the verifier uses a random-number generator to select numbers corresponding to the contract numbers in the database or spreadsheet listing the contracts. The verifier should randomly select 12 to 13 percent of the contracts to account for extenuating circumstances (e.g., missing paperwork in the contract files, inclement weather, inaccessibility to the land, etc.) that will eliminate some of the acreage from verification.

2. Contract Information

Before conducting field verification of contracted carbon sequestration practices, the field verifier must obtain the following information from the verifier program manager:

Contract holder's name
Farm name (if different from contract holder)
Contract holder address
Contracted acreage
Number of parcels (tracts and fields)
Size of parcels (tracts and fields)
Location of fields (legal descriptions and aerial photographs)
Crop history and current crop information

All data will be entered onto the field verification form. Prior to conducting the field verification, the contracted acreage must be located on project maps, and the farm owner/operator must be contacted to request permission to inspect the contracted fields to verify tillage practices. The owner/operator should be asked if they wish to accompany the field verification inspection.

3. Verification Equipment

The following information and equipment will be used to collect and record data for each contract:

Farm Service Agency (FSA) maps or other aerial photographs
FSA-578 Forms
Geo-Positioning System (GPS) receiver
Digital Camera (5.0 megapixel or greater resolution)
Laptop computer if verification data is recorded electronically

4. Field Data Collection

Upon arriving at contracted farms to verify conservation tillage practices, the following procedure will be used to record field conditions:

a. Confirm acreage. Estimated acreage must be within two percent of the contracted claim. Some possible methods include:
   i. Visual comparison of field boundaries to FSA maps or other aerial photographs
   ii. GPS points taken and inputed to ARC-GIS (or similar) aerial map program
   iii. Satellite imagery techniques
   iv. Range finder
   v. Other accepted methods as deemed appropriate by verifier and CCX

b. Confirm vegetative condition. Affirm crop type (important in assessing tillage practice verification).

c. Assess evidence of field tillage practices, including (make sure all observations are taken at least 50 feet inside the field boundary):

   i. Indications of soil disturbance, including "clean" or bare soil, broken soil surface, ridges, and/or furrows.
   ii. Presence of surface residue from previous seasons/years. The FSA map or FSA-578 form will often have the previous year's crop indicated. The field verifier can use this information as a cue for which type of old crop residue to look for.

d. Take a GPS reading of the field from the point-of-entry to the field from the nearest access; typically a farm driveway from the road. Mark on the field record where the GPS reading was taken.

e. Collect digital photographs of field conditions, including:

   i. Overview of the field, if possible.
   ii. Close-up of soil/tillage conditions (photograph of ground within 10 feet and from standing height). Avoid shadows as much as possible. A close-up photograph is not necessary if the field view photograph adequately shows the residue remaining on the field or shows the presence of tillage of the field. Close-up photographs are essential when evaluating a field with a standing crop that obscures the ground surface.

At a minimum, every tract that is enrolled in the program should have at least one GPS reading and one photograph. If the tract is divided into multiple fields with multiple crops, every field that has a different crop should be verified and have an associated GPS reading and picture.

Record all field observations and measurements onto a standardized form including photograph numbers and locations in the field. Compare recorded data to appropriate contract information to assure consistency.

5. Field Verification Timing

For accuracy and efficiency purposes, the most desirable time of year to perform field verification in the Midwest and Great Plains is spring, typically from April 1 to June 30. The spring time period allows the verifier to examine the maximum acreage of a field from the fewest observation points, which provides for the greatest confidence in acres observed and is the most efficient method to examine the fields. Field verification at or near planting time also provides the greatest confidence regarding tillage practices (or lack thereof) for a cropping season. Field verification within two to three weeks after planting is the most ideal time; however, not all field verification can be accomplished in a two to three-week time period.

The second most desirable time frame is fall, after harvest, typically from October 1 to November 30. Examining the fields in the fall for old residue is more challenging than in the spring because the old residue is more decomposed than in the spring and is often buried under the current year's harvested residue. Field verification after snow fall is not desirable.

6. Contract Non-Conformance

If it is discovered that a field has not performed no- or minimum tillage practices, or the estimate of contracted acreage is not in accordance with the contract between the landowner and CCX, the following procedure will be followed:

a. The field verifier will notify the SES program manager of the non-conformance with contract requirements, including issues of tillage practices other than no-tillage, wrong acreage (specifically, less acreage in field than indicated by the contract), wrong location information, different cropping strategies, irrigated versus dryland acres, or fallowed acres. The SES program manager will confirm all contract information with the field verifier to determine that no mistakes were made regarding contract information and field location, cropping, or other conditions of the contract.
b. The verifier program manager will describe the non-conformance issue by contract number in the verification report that is delivered to CCX and the aggregator.
c. The aggregator will communicate all issues to the landowner regarding the non-conformance.
d. Resolution of the issue may be attained by correction of the non-conformance and re-verification of the practice. The final decision of contract violation and status will be made by CCX.
e. Records of the field verification and findings of non-conformance will be fully documented, including photo documentation, field notes of observations, and field location (legal description and GPS coordinates).

7. Data Management

All field verification data will be signed by the data collector and submitted to the Carbon Sequestration Program file manager. The Carbon Sequestration Program file manager will maintain a secure file of all data collected, including hard copies of paper forms, and an electronic database of all field data for each contract, including photo documentation.

Upon submission, all data forms will be reviewed by a data quality assurance officer to make sure that all forms are complete, calculations are correct, and that information is consistent with contract information provided by the aggregator. The data quality assurance officer will sign the forms as completed and checked. Original field data forms will be filed by contract number in a secured filing system.

When authenticated, all field data will be entered into a program database. The database will be secure to entry by authorized persons only. The database will be maintained for use by the CCX, the aggregators, and approved auditors of the program.

8. Verification Report

When the final verification report is prepared, it is written for a cropping season, not a calendar year. The cropping season is considered to be October 1 until September 30 for the Midwest and Great Plains. For example, the 2007 verification report is covering the time period of October 1, 2006 until September 30, 2007. This timing works well for most row crops, spring-seeded small grains, and winter wheat. Field verification in the spring provides the best timing for the existing contracts.

New contracts are handled differently. When the contract sign-up period ends in mid-September or October for new contracts, field verification is typically necessary in the first fall of the contract. Therefore, field verification conducted in October and November 2007 for new contracts covers the 2007 cropping season, which was from October 1, 2006 until September 30, 2007. At some level, field verification is always looking back in time at least 6 months.

The basic format and content of the verification report includes:

- Introduction
- Verification methodology
- Verification summary which includes a table that compares and contrasts the no-till acreage enrolled in a pool of contracts, the acreage that was field verified, and the acreage that did and did not meet the program criteria. In addition, this section of the report includes a discussion of all discrepancies observed, by contract.
- Conclusions
- Summary spreadsheet of all contracts field verified as an attachment.

Common Non-Conformance Issues

- Tilled end rows: It is not uncommon because of compaction issues, for farmers to till end rows. As a verifier, it is important to determine if the farmer has already excluded these acres when he enrolled the fields.
- Spot tillage to fix weather damage or to install or fix conservation practices. Large spring or fall rains can create ditches and wash outs in fields and cut down terraces. Farmers typically will till these areas to fix the ditches or terraces or may till an area to install a new terrace, waterway, or tile lines. As a verifier, this acreage in these fields should be estimated and reported in the verification report. However, most aggregators consider this to be de minimis levels of tillage because it is less than 3 percent of the acreage in a contract.

- Application of manure. Injection of manure is acceptable in this program. However, in wet conditions, fields can be severely rutted when manure is injected and the farmer is forced to till the field prior to planting. Some manure (especially solid manure) is surface applied and often is incorporated because of environmental concerns and to conserve nutrients. Incorporation of the manure is tillage and is an ineligible practice in the program.

- Soil compaction and disturbance caused by cattle grazing stalks. Grazing of stalks by cattle is allowed in the program; however, in poor weather conditions, the cattle can cause severe soil compaction or rutting of the soil. In these instances, it is not uncommon for farmers to till these areas prior to planting.

- Corn after corn: This has **not** been a problem to this point in the program; however, many no-till cropping systems in the Midwest were designed for a corn-soybean crop rotation. With higher corn prices, it is likely there will be more corn planted in the near future. It remains to be seen how farmers will contend with higher residue levels when planting corn after corn.

Common Interpretation Issues

- For the purposes of this program, the following tillage practices are considered acceptable under the no-till definition: no-till planter, no-till drill, strip-till planters, rolling harrows such as the "Phoenix" or "Phillips Harrow," subsoil ripper with at least 24-inch shank spacing, anhydrous ammonia applicator, and low disturbance liquid manure injectors.

  Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, and moldboard plow. In general, if the implement would require that a leveling or smoothing activity follows, it would likely result in too much soil disturbance.

- Ridge-till: Ridge-till was allowed as a form of "conservation tillage" in the first round of contracts in 2003. Ridge-till is no longer considered an allowable practice as of 2007 because more than 30 percent of the row-width is disturbed to rebuild the ridges.

- Continuous cotton, soybeans, and pulse crops (i.e., beans, peas, lentils, etc.) are eligible only if there is a cover crop.

- Biomass removal. Burning stubble, baling residue, and chopping for silage are not allowed for annual crops. Chopping for silage is allowed if a cover crop is planted. Grazing of stalks or winter wheat is allowed. (Grazing of stalks can lead to other issues as described above). If the residue has been removed from the field, the verifier will determine the acreage that was affected and indicate in the

verification report those acres that are not eligible for the carbon credit in that year. The practice of biomass removal does not mean this acreage is thrown out of the program for the duration of the contract.

- Irrigated compared to dryland acres. There are different crediting rates in the drier regions of the Great Plains for irrigated versus dryland no-till acres. Field verification must differentiate between these acres. The first method to determine these acres is a file review and a review of the FSA-578 Form, which distinguishes the acres as "Ir" for irrigated and "Ni" for non-irrigated. The second method of verification is an examination of the field maps. A center pivot circle or partial circle is obvious on a good aerial photograph. The third method of verification is field observation. Most of the irrigated acres will be under center pivot, with a lesser amount being gravity or furrow irrigated. The verifier should see signs of a center pivot and the circular field shape or see signs of piping, irrigation canals, and furrows necessary for gravity irrigation. Another sign of irrigated acres is a "tailings" pond near the field to collect run-off water.

- Fallowing (laying idle) of acres. This is a practice that is still common in drier areas of the Great Plains. The frequency of fallowing acres varies across regions and crop rotations. Acres that are fallowed are **not** eligible for this program. The fallow acres are indicated on the FSA-578 Form and can be observed during field verification.

  The definition of fallow for this program is to not have a crop in the field within a 12-month growing season (October 1 to September 30). This is going to be an issue where the crop rotation includes winter wheat and row crops, such as corn, soybeans, grain sorghum (milo), and sunflowers. Harvesting wheat in late June or early July followed by planting a row crop the next spring would not be a fallow period and would be acceptable under the rules of the program. Fall harvest of a row crop and waiting an entire year to plant winter wheat in the fall would **not** be acceptable because there would be a 12-month fallow period.

  The fallow issue is further complicated due to the frequency of fallowing. CCX's technical advisory committee has agreed that a wheat-fallow system where acres are fallowed every other year is not eligible for this program. However, many cropping systems involve fallowing acres once every 3 to 5 years depending on the annual precipitation and the exact cropping system. Past research data shows that soil carbon sequestration occurs in cropping systems in the Central Plains when acres are fallowed only one out of every 3 to 5 years.

  Based on the research data and discussions with the technical advisory committee, the approach that SES would recommend on fallow acres that are only fallowed once every 3 to 5 years is to allow the farmer to enroll these acres, but require the farmer to self-certify annually and to provide the annual FSA-578 forms to document the specific number of fallow acres for each year. The farmer would

not receive a carbon credit on those fallow acres for that year. Likewise, the verifier will document the number of fallow acres in the year of field verification, but will not recommend that these acres be thrown out for the duration of the contract.

- Prevented planting. In rare circumstances in certain irrigation districts, farmers voluntarily work with the irrigation district and choose not to plant irrigated acres to a crop to conserve water. These "prevented planting" acres would be verified as fallowed acres and would not receive the irrigated carbon credit for that year.

- Alfalfa hay. Alfalfa stands have been a challenge for the program because it is a cropping system that falls between annual grain crops and grassland plantings. Alfalfa is a perennial that is typically hayed (occasionally grazed) with a stand life of 4 to 6 years in most of the Midwest (longer in the northern regions of the U.S.). Alfalfa provides for year-round vegetation on a field and significant erosion control compared to a tilled grain crop. Alfalfa has an extensive and deep taproot system, but when hayed, the majority of the biomass is removed. Research data has suggested that soil-carbon sequestration for alfalfa is more similar to no-till row crops than to grassland. Because many alfalfa stands are not continued past 6 years and because the research data indicates a soil sequestration rate less than grassland plantings, the program has determined these acres are eligible for the no-till crediting rate, but not the grassland crediting rate.

  The verification of these alfalfa acres remains a challenge because of the many variations of "alfalfa stands" that are observed. The basic rule-of-thumb is that if the alfalfa field is greater than 50 percent alfalfa, it is verified as eligible no-till acres; if the alfalfa field is less than 50 percent alfalfa, with the remainder being grass, it is verified as eligible grassland conversion acres. The latter case is not uncommon in old, depleted alfalfa stands that the landowner is allowing to revert back to grasses.

- Conservation Reserve Program (CRP) into crop production. Due to increased crop prices, CRP and other grass acres could receive increased pressure to be converted to crop production. These acres are considered croppable by FSA and meet the CCX definition of eligible acres for no-till carbon credits. However, it is SES's belief that converting past grassland (even if considered croppable by FSA) to no-till crop production does not meet the scientific merits of soil carbon sequestration. These acres have been verified as not meeting the eligible requirements for the no-till carbon credit.

- "Old" grass. There have been cases in which farmers have signed up fields as no-till acres where the fields are actually grass that was seeded prior to 1999. These fields are listed on the FSA-578 forms and on the FSA maps as croppable acres. As in the example listed above; the fields meet the CCX definition of eligible no-till acres. However, the intent of the no-till carbon credit is

converting conventionally-tilled crop acres into minimum or no-till crop acres. SES has verified these old grass acres as **not** eligible for the no-till carbon credit. The other difficulty with verification of these acres is the fact that many of these old grass acres were not seeded through the CRP program and were seeded more than 20 years ago, so records are limited.

3.2 Grassland Conversion Verification

Introduction

The following procedure has been developed to provide guidance for confirming practices for returning tilled cropland to grassland, as per agreement and contracted between landowners/farmers and the Chicago Climate Exchange. The purpose of the verification protocol is to confirm that land previously used for crop production has been converted to grassland cover for the purpose of capturing (sequestering) atmospheric carbon through photosynthesis during growth, and allowing the vegetation to remain on and in the soil, wherein the vegetative matter will decompose to stable organic carbon.

Conversion of former cropland to grassland is self-evident in field observation. However, it must be further confirmed by checking records of either the landowner or manager, and the NRCS offices in the county to determine when the land was converted back to grassland from cultivated ground. Under the rules of this program, prior tilled cropland had to be converted to grassland on or after January 1, 1999, to qualify for the grassland crediting rate.

All data collected during the verification process will be entered onto a standardized form that will be used as the contract verification record. Each form must be filled out, completed and signed by the field verification specialist conducting the verification process.

Contract Selection Process-Sampling Requirements

The aggregator provides the verifier with a database or electronic spreadsheet that contains all the contracts enrolled in a "Pool" of contracts. The objective of the verification is to inspect a minimum of 10 percent of the contracts each year, which also should comprise a minimum of 10 percent of the enrolled acreage. To select the verification acres, the verifier uses a random-number generator to select numbers corresponding to the contract numbers in the database or spreadsheet listing the contracts. The verifier should randomly select 12 to 13 percent of the contracts to account for extenuating circumstances (e.g., missing paperwork in the contract files, inclement weather, inaccessibility to the land, etc.) that will eliminate some of the acreage from verification. Additionally, within a pool of contracts, the verifier will not field verify the same contract acreage more than once within a 4 or 5-year contract period.

Contract Information

Before conducting field verification of contracted carbon sequestration practices, the field verifier must obtain the following information from the verifier program manager:

Contract holder's name
Farm name (if different from contract holder)

Contract holder address
Contracted acreage
Number of parcels (tracts and fields)
Size of parcels (tracts and fields)
Location of fields (legal descriptions and aerial photographs)
Date of grass planting-often recorded on the application to the aggregator

All data will be entered onto the field verification form. Prior to conducting the field verification, the contracted acreage must be located on project maps, and the farm owner/operator must be contacted to request permission to inspect the contracted fields to verify grassland or vegetation cover. The owner/operator should be asked if they wish to accompany the field verification inspection.

Verification Equipment

The following information and equipment will be used to collect and record data for each contract:

Farm Service Agency (FSA) maps or other aerial photographs
Geo-Positioning System (GPS) receiver
Digital Camera (5.0 megapixel or greater resolution)
Laptop computer if verification data is recorded electronically

Field Data Collection

Upon arriving at contracted farms to verify grassland conversion practices, the following procedure will be used to record field conditions:

a. Confirm acreage. Estimated acreage must be within two percent of the contracted claim. Some possible methods include:
   vi. GPS points taken and inputed to ARC-GIS (or similar) aerial map program
   vii. Satellite imagery techniques
   viii. Range finder
   ix. Other accepted methods as deemed appropriate by verifier and CCX

b. Confirm vegetative condition. Affirm grass/vegetation cover type. The field observations recorded on the standardized form should indicate the predominant vegetation (e.g., native grasses, cool-season grasses, legumes, forbs, etc.)

c. Confirm date of grass cover seeding/planting. Verification can be done through a records review and through visual cues in the field.

   i. Records may include: (1) seeding dates recorded on the Carbon Credit Program application form; (2) Conservation Reserve Program (CRP)

contract dates recorded on FSA aerial photographs; (3) CRP planting dates recorded on the FSA-578 form; (4) seeding dates recorded on an NRCS seeding plan; (5) receipts of grass seed purchases; (6) farm records of land use; or (7) other information from the land-owner that will confirm the date of grass seeding of the contract field. If the landowner does not have record of the seeding date, the local office of the FSA or Natural Resources Conservation Service (NRCS) may be able to provide the records. However, the landowner will have to notify the local FSA or NRCS office and grant permission for the verifier to access and review these records.

ii. Visual cues. These cues can be in the field or from reviewing aerial photographs from the Internet. Field cues of older grass stands can be: predominance of cool-season grasses, such as brome in a CRP stand; the presence of larger trees, such as cedar, locust, and hedge on upland plantings, or cottonwood, willow, and maple on wetland plantings; the presence of old fences, watering structures, and cattle paths indicating permanent pasture or long-term (>25 years) pasture. Field cues of newer grass stands can be: the predominance of native, warm-season grasses; presence of legumes or annual weeds; evidence of grass seeding rows; and the presence of old crop residue.

Other visual cues can be taken from the review of aerial photographs taken in the time period of the late 90s through the early 2000s. An examination of either black-and-white or color aerial photographs in this critical time period can reveal when a specific field was converted from cropland into permanent grass.

d. Assess evidence of grassland conversion from cropland. This portion of the verification can be done concurrently with Item c from above. The verifier can use a records review of FSA and NRCS forms and maps; a review of aerial photographs; and visual evidence in the field to determine if the field was converted from cropland to grass. A review of FSA aerial maps and the associated FSA-578 form provide a good basis for conducting this verification. Cropped acres or "croppable" acres will typically be assigned a field number on an FSA map and these acres, by crop type, will be recorded on the FSA-578 form. Permanent pasture typically will not be assigned a field number on an FSA map and the pasture acres will not be recorded on FSA-578 form. In addition, permanent pasture acres are not eligible for the CRP program because the original intent of the CRP program was to take highly erodible land (HEL) cropland out of production and put the land into perennial grass vegetation to prevent soil erosion.

Visual evidence in the field of prior cropland may be old crop residue in newer grass seedings, terraces, or other evidence of past farming activities.

e. Take a GPS reading of the field from the point-of-entry to the field from the nearest access; typically a farm driveway from the road. Mark on the field record where the GPS reading was taken.

f. Collect digital photographs of field conditions, including:

   i. Overview of the field, if possible.
   ii. Close-up of grass cover conditions (photograph of ground within 10 feet and from standing height). Avoid shadows as much as possible.

Record all field observations and measurements including photograph numbers and locations in the field. Compare recorded data to appropriate contract information to ensure consistency.

Contract Non-Conformance

If it is discovered that a field is not converted grassland, or the estimate of contracted acreage is not in accordance with the contract between the landowner and the Chicago Climate Exchange, the following procedure will be followed:

f. The field verifier will notify the verifier program manager of the non-conformance with contract requirements, including issues of pre-1999 status of the land, seeding dates, wrong acreage (specifically, less acreage in practice than indicated by the contract), or wrong location information. The verifier program manager will confirm all contract information with the field verifier to determine that no mistakes were made regarding contract information and field location or other conditions of the contract.
g. The verifier program manager will describe the non-conformance issue by contract number in the verification report that is delivered to CCX and the aggregator.
h. The aggregator will communicate all issues to the landowner regarding the non-conformance.
i. Resolution of the issue may be attained by correction of the non-conformance and re-verification of the practice. The final decision of contract violation and status will be made by the CCX.
j. Records of the field verification and findings of non-conformance will be fully documented, including photo documentation, field notes of observations, and field location (legal description and GPS coordinates).

Data Management

All field verification data will be signed by the data collector and submitted to the Carbon Sequestration Program file manager. The Carbon Sequestration Program will maintain a secure file of all data collected, including hard copies of paper forms, and an electronic database of all field data for each contract, including photo documentation.

Upon submission, all data forms will be reviewed by a data quality assurance officer to make sure that all forms are complete, calculations are correct, and that information is consistent with contract information provided by the aggregator. The data quality assurance officer will sign the forms as completed and checked. Original field data forms will be filed by contract number in a secured filing system.

When authenticated, all field data will be entered into a program database. The database will be secure to entry by authorized persons only. The database will be maintained for use by the CCX, the aggregators, and approved auditors of the program.

Common Non-Conformance Issues

- The most common non-conformance issue identified in the first four years of this program has been grass acres seeded prior to 1999, such as old CRP contracts. For older CRP contracts, this is confusing to some land owners because they have old CRP acres that have been re-enrolled into a new CRP contract after the 1999 date, so they believe the acres are eligible for this program.
- The next most common non-conformance issue has been enrolled grass acres that have never been farmed (permanent pasture) or croppable acres that have been in grass pasture or hay for many years (>25 years).
- In limited cases, there have been grass acres enrolled (CRP contract acres) where the field verification confirmed that the grass seeding had not yet occurred.

Common Interpretation Issues

There are several situations where program intent and interpretation are an issue. Listed below are some of these issues:

- Alfalfa hay. Alfalfa stands have been a challenge for the program because it is a cropping system that falls between annual grain crops and grassland plantings. Alfalfa is a perennial that is typically hayed (occasionally grazed) with a stand life of 4 to 6 years in most of the Midwest (longer in the northern regions of the U.S.). Alfalfa provides for year-round vegetation on a field and significant erosion control compared to a tilled grain crop. Alfalfa has an extensive and deep taproot system, but when hayed, the majority of the biomass is removed. Research data has suggested that soil-carbon sequestration for alfalfa is more similar to no-till row crops than to grassland. Because many alfalfa stands are not continued past 6 years and because the research data indicates a soil sequestration rate less than grassland plantings, the program has determined these acres are eligible for the no-till crediting rate, but not the grassland crediting rate.

  The verification of these alfalfa acres remains a challenge because of the many variations of “alfalfa stands” that are observed. The basic rule-of-thumb that is used is that if the alfalfa field is greater than 50 percent alfalfa, it is verified as

eligible no-till acres; if the alfalfa field is less than 50 percent alfalfa, with the remainder being grass, it is verified as eligible grassland conversion acres. The latter case is not uncommon in old, depleted alfalfa stands that the landowner is allowing to revert back to grasses.

- Reseeding old CRP stands or renovating pasture. It is not uncommon to see old cool-season CRP grass stands (often brome in the Midwest) that have been required to be re-seeded or overseeded with warm-season natives due to CRP contract rules. A similar circumstance is a producer that renovates old depleted pasture by overseeding. Because these acres were already in grass prior to 1999 and were not cropped; these acres do **not** qualify as grassland conversion acres.

- Haying, grazing, or burning restrictions. The program has not placed any restrictions on how the grass acres are managed with regard to biomass removal in order to qualify for the grassland conversion crediting rate. Haying, grazing, and burning are becoming more common practices even for CRP acres, as the CRP rules have changed over time. There have been very limited instances where the verifier has disallowed small portions of grass acres because of extremely high grazing pressure that has severely damaged the grass stand, such as areas used as lots for feeding or calving. These areas have greater than 50 percent bare ground and have high annual weed pressure.

- Poor grass stand, bare ground, waterlogged conditions, or overgrazing. Any situation that prevents the establishment and maintenance of a permanent grass stand will be verified as non-qualifying acres for the grassland conversion. Field observations of this type of condition include: greater than 50 percent bare ground (Zone A of the program); annual weed dominance on a grass stand over 3 years old; and prolonged periods of standing water. Typically, these are small areas of a grassland seeding, such as overgrazed areas as noted above or depressional, waterlogged areas of a Wetland Reserve Program (WRP) seeding that are inundated with water for several weeks of the year.

Carbon Sequestration Verification Record Grassland Conversion

Contract Data

Contract No.:

Contract Owner:

Address: City St. Zip

Phone Number:

Contracted Field Location(s) – if multiple fields, provide acreage in each field.

Field Data

FSA	Tract/ Field	Legal Description	Contracted Acres	Confirmed Acres	Date of Seeding	GPS Mark	Photo Number

Tract/ Field	Direction Facing	Field Observations (Vegetation Type)/Photo Description

Is Follow-Up Verification Needed? Why?: _____

I hereby verify as a Certified Crop Advisor/Certified Professional Soil Scientist/ Registered NRCS Technical Service Provider that the data presented in this report is accurate and true.

_____ _____

Name Registration/Certification No.

_____

Date

3.3 Rangeland Soil Carbon Verification

Certain rangelands managed to enhance carbon storage in the soil are eligible for inclusion in the CCX Rangeland Soil Carbon Management Offsets program provided each of the following conditions are met (1-4):

1. The project takes place on rangeland, which is defined by the NRCS as:

"Land on which the historic plant community is principally native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing. In most cases, range supports native vegetation that is extensively managed through the control of livestock rather than by agronomy practices, such as fertilization, mowing, or irrigation. Rangeland also includes areas that have been seeded to introduced species (e.g., clover or crested wheatgrass) but are managed with the same methods as native range1."

2. The project is in a geographic area for which data on soil sequestration rates for rangeland are available to CCX.

3. Project involves rangeland management practices that include use of ***all*** of the following tools:
    a. Light or Moderate Stocking rates;
    b. Sustainable Livestock Distribution which includes:
        i. Rotational grazing
        ii. Seasonal use.

    The Natural Resources Conservation Service (NRCS) Field Office Technical Guides publish guidelines for managing the controlled harvest of vegetation with grazing animals. Stocking rates and livestock distribution criteria are defined according to County and State in the NRCS "Prescribed Grazing Specification" code.

    In most regions Rangeland that can be classified as degraded prior to inception of the project is eligible for different crediting rates. Degraded rangeland indicators specific to soil carbon storage are listed below and include soil surface loss or degradation and heavy stocking rates (exceeding carrying capacity of project land).

4. The project owner can demonstrate that its rangeland holdings outside of the Project are sustainably managed.

Documentation of Rangeland Management Practices

1 In many cases, Rangeland refers to areas in the Western part of the U.S., while the general term "Grazing Lands" is used in regions East of the Mississippi. The use of the term Rangeland in this protocol is a land use designation and not a geographic designation. Land that fits the above definition of Rangeland *may* be eligible for CCX Rangeland Soil Offsets whether it is nominally referred to as Rangeland or Grazing Land provided that appropriate crediting rates can be established.

Conformance with the above eligibility requirements may be documented using the following methods (to be confirmed via site visit by CCX-approved verifier):

- Photographs of project site (e.g. aerial, remote sensing)
- Ranch records of stocking rates and grazing rotation patterns
- Records from agricultural extension agents or other agencies performing a monitoring function.

NRCS indicators of degraded rangeland related to below-ground carbon storage

The U.S. Natural Resources Conservation Service (NRCS) has established indicators of degraded rangeland that are published in "*Interpreting Indicators of Rangeland Health*" (U.S. Natural Resources Conservation Service, 2005). Eligibility to earn CCX Rangeland Soil Carbon Management Offsets based on restoration of degraded rangeland requires that the included rangelands must fall under the NRCS designation "Extreme" or "Moderate to Extreme" for indicators 1 and 2, and "Slight to Moderate, Moderate, Moderate to Extreme or Extreme" for indicator 3 to qualify as degraded. The applicable indicators are summarized below. A project site may qualify as degraded if any of the following indicators are present.

Indicator: Bare Ground

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)	
	Extreme	Moderate to Extreme
Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderate to much higher than expected for the site. Bare areas are large and occasionally connected.

Indicator: Soil Surface Loss or Degradation

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)	
	Extreme	Moderate to Extreme
Soil Surface Loss or Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure and subsurface layers.

Indicator: Annual Production

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)			
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate
Annual Production	Less than 20% of potential production for the site based on recent weather.	20-40% of potential production for the site based on recent weather.	40-60% of potential production for the site based on recent weather.	60-80% of potential production for the site based on recent weather.

4 The Verification Report and Review

The verification report, which is to be produced by the Verifier, summarizes the proposed Offset project's adherence to the protocol laid out in the CCX rules given in Chapter 2 of this manual. Generally, the report should describe how the Verifier conducted the project review and the results of that review, with an eye to clearly and concisely explaining how the verification procedures listed in the above section of this manual were executed in the field. Length is no indication of report completeness; a thorough report may be as little as 10-15 pages, plus relevant appendices and recommendations for Offset crediting. The report must include:

- Description of expertise and training of staff involved in verification
- Description of sampling procedure and results
- Description of Verifier's execution of methodology for both desk and in-field verification
- Verification results, including recommendation of Offset crediting in metric tons carbon dioxide equivalent

Once completed, the verification report is submitted to CCX for staff review. If all items on the Verifier Checklist are present and the report is otherwise complete, the report is sent to NASD, the CCX Provider of Regulatory Services, for a second round of checks. NASD shall audit soil sequestration verification reports to assure completeness, accuracy and conformance to the CCX-specified inspection protocols. If the report is deemed to be complete and requires no additional review of verification methodology by the CCX Committee on Offsets, the quantity of Offsets listed in the report will be registered to the Aggregator's CCX Registry account in the appropriate vintage(s). If CCX staff, NASD or the CCX Committee on Offsets requires any additional information from the Verifier, CCX staff will contact the Verifier with such a request.

Verification Checklist

This outline is meant to serve as a guide assembling a verification report. CCX approved verifiers should use their own discretion to amend individual reports to reflect conditions specific to the project undergoing verification. Each verification report should be able to function as a stand alone document providing background of the project verifier, eligibility criteria, verification procedures, etc. All verification reports should be signed and dated and presented on company letterhead.

Introduction

- Provide background on the verifier
- Provide overview of project

Verifier Qualifications

- Provide overview of qualifications including any training provided to staff in preparation for the verification

Scope of Work

- Provide overview of the scope of work and objectives of the verification

Eligibility Criteria

- Provide a listing of the eligibility criteria relevant to the verified acres Consult the CCX Rulebook for a complete list of eligibility criteria

Verification and Sampling Methodology

- Provide overview of verification procedures,
- Provide detailed description of desk audits include documents reviewed, etc.
- Provide detailed description of field verification procedures
- Provide overview of sampling methodology

Results

- Provide an overview of the desk audit results
- Provide an overview of the field verification results
- Provide a summary table of the acres verified
- Provide a listing of the ineligible contracts including an explanation of why the contract was deemed ineligible
- Provide a summary table of the ineligible contracts

Photographs

- Provide a sample photograph of each contract found not in compliance along with any other photographs the verifier deems to be noteworthy

Summary

- Provide a summary of the verification

Appendix A.1 CCX General Conflicts of Interest

Each applicant to become a CCX-Approved Verifier is required to complete this statement, which addresses general organizational and personal conflicts of interest inherent in your organization's provision of verification services. Should your application be accepted, your organization shall be required to complete a project-specific statement of conflicts of interest which can be obtained from CCX. It addresses any potential or actual conflicts of interest that may arise in your organization's provision of verification services for a specific CCX Member or Offset Provider.

Requirement to Submit a Statement of Conflicts of Interest:

- Any organization applying to become a CCX-Approved Verifier must submit to CCX a statement of any potential or actual conflicts of interest that may result from undertaking verification work.
- The statement shall include proposed steps to be taken to avoid, mitigate or neutralize such potential or actual conflicts of interest.
- The statement shall also refer to any appearance of conflicts of interest that may arise even if this, in the opinion of the applicant, does not lead to substantive conflicts of interest.
- The appropriate CCX Committees may evaluate statements of potential or actual conflicts of interest on a case-by-case basis and make recommendations to the CCX Executive Committee, which shall decide on an appropriate course of action.
- These committees may request additional information or a personal appearance in order to make their determination.

The CCX-Approved Verifier shall immediately make full disclosure in writing to CCX of any change in circumstances that may lead to the emergence of any conflict of interest in the provision of verification services. This disclosure shall include a description of actions taken or that will be taken to avoid, neutralize, or mitigate the actual or potential conflict of interest. Failure to do so may result in revocation of status as a CCX-approved Verifier.

Please send two copies of the completed form and all attachments to:

Jeffrey O'Hara
Chicago Climate Exchange
190 South LaSalle Street
Suite 1100
Chicago, IL 60603

Please Note:

All information submitted to CCX will be handled in a strictly confidential manner.

An applicant shall be responsible for identification of any form of potential or actual conflict of interest it may face, even if that type of conflict of interest is not specified in this document.

When completing this questionnaire, all questions relating to potential or actual conflicts of interest should be answered with reference both to the applicant and to any other organization with which such applicant has a legal, financial, functional or structural link (e.g. common ownership, shared staff and management, contractual arrangement, or informal contract) such as, for example, a holding company, parent organization, subsidiary, partnership or affiliate.

Examples:

Conflict Of Interest is a situation in which, because of other activities or relationships, a person or organization is unable or potentially unable to render impartial verification services in relation to a potential client's greenhouse gas (GHG) emissions or forest carbon sequestration, or the person or organization's objectivity in performing such verification activities is or might be compromised.

Two types of conflict of interest are described below:

Organizational Conflict Of Interest is defined as instances where the ability to render objective GHG verification services may be affected by the services provided by, shared management and/or financial resources with, or other situations created by a parent organization or other related entities.

Personal Conflict of Interest is defined as a relationship of an employee that may impair the objectivity of the employee in performing verification services.

Circumstances that Present an Actual or Potential Conflict of Interest:

Prior, current or planned performance of the following "non-verification" services may result in a conflict of interest for a CCX-Approved Verifier:

- Designing, developing, implementing, or maintaining GHG emissions inventory systems or forest carbon sequestration projects, GHG information systems or emission or sequestration calculation tools
- Designing energy efficiency, renewable, or other projects which explicitly identify GHG reductions as a benefit
- Appraisal services of carbon or GHG liabilities or assets
- Brokering in, advising on, or assisting in any way in carbon or GHG-related markets
- Management over health, environment and safety functions
- Legal and expert services unrelated to verification for CCX purposes

Other factors that may constitute a conflict of interest include, without limitation:

- If the CCX-Approved Verifier shares any board members or senior management with actual or potential recipients of the non-verification services listed above.
- If there is a financial, functional or structural link (e.g. common ownership, contractual arrangement, or informal contract) between the CCX-Approved Verifier and potential or actual recipients of verification services, whether directly or through affiliated organizations (e.g. holding companies, parent companies, subsidiaries, formal partners, affiliates, etc.).
- If staff and senior management of the CCX-Approved Verifier are involved in any commercial, financial or other processes that might influence their judgment and render it not impartial or not objective.

Instructions:

1. If your organization has been approved as a certifier by the California Climate Action Registry or as a CDM Designated Operational Entity, you should complete the attestation on the following page. You should attach the attestation to a copy of your conflicts of interest statement that was submitted to either of the above two organizations. That package should be attached to your verifier application form.
2. Otherwise, please answer the conflicts of interest questionnaire below.
3. Any other papers attached as evidence should be clearly numbered and indexed and attached behind your answers to the conflicts of interest questionnaire.
4. Complete the attestation on the following page and attach it to the front of your statement of conflicts of interest.
5. The package should be attached to your verifier application form.

Conflict of Interest Questionnaire:

1. What services does your organization offer that may present an actual or potential conflict of interest if your organization were to perform verification services in the fields for which it has applied to become a CCX-Approved Verifier? What percentage of your organization's income is from "non-verification services"?
2. Please provide a list of names of the staff that may participate in providing verification services to CCX Members or Participant Members. For these staff, are there any instances of personal or professional relationships, financial interests or any other factor that might influence their judgment? If yes, please detail.
3. Please document the structures and procedures currently in place in your company to identify potential or actual conflicts of interest and to avoid, mitigate or

neutralize any potential or actual conflicts of interest identified. Identify steps taken in order to minimize any risks to your company's impartiality.

(This form should be signed by the same person who signed the verifier application form.)

I hereby warrant the truthfulness of my answers to all questions on this form and the attached statement and documentation and to any other questions that may be asked by CCX or its designated representatives. I agree to maintain the accuracy and completeness of the information contained in this form and the attached statement and documentation.

I undertake to immediately notify CCX in writing about any material change in any information contained in this form and the attached statement and documentation.

I authorize CCX or its designated representatives to obtain information from sources that they deem appropriate in order to adequately evaluate and process this form and the attached statement and documentation and to ensure the integrity and effective operation of the CCX in the future.

I understand that failure to provide full and accurate information may result in the delay, or rendering invalid of any decision made in response to the information contained in this form and the attached statement and documentation.

Signed and accepted by duly authorized representative of:

_____
Organization Name

_____
Signature

_____
Print Name

_____
Title

_____
Date

Attachments

☐ Answers to Conflicts of Interest Questionnaire.
☐ Any supporting evidence.

Appendix A.2 CCX Project Specific Conflicts of Interest

Requirement to Submit a Statement of Conflicts of Interest:

Before a CCX-Approved Verifier begins any verification work for a CCX Member or Participant Member, the CCX-Approved Verifier must submit to CCX a statement of any potential or actual conflicts of interest that may result from undertaking such verification work. The statement shall include proposed steps that may be taken to avoid, mitigate or neutralize the potential or actual conflict of interest. The statement shall be signed by a representative of the CCX Member or Participant Member for which the verification work will be performed. The statement shall also refer to any appearance of conflict of interest that may arise even if this does not lead, in the opinion of the parties signing the statement, to a substantive conflict of interest. The CCX Offsets Committee shall evaluate statements of potential or actual conflicts of interest on a case-by-case basis and make recommendations on an appropriate course of action.

The CCX-Approved Verifier shall make full disclosure in writing to CCX immediately of any change in circumstances that may lead to the emergence of any conflict of interest in the provision of verification services to any CCX Member or Potential Member for which it is currently providing such services. This disclosure shall include a description of actions taken or that will be taken to avoid, neutralize, or mitigate the actual or potential conflict of interest.

Circumstances that Present an Actual or Potential Conflict of Interest:

Performance of the following services for a CCX Member or Participant Member may result in a conflict of interest for a CCX-Approved Verifier wishing to provide verification services to that CCX Member or Participant Member:

- Designing, developing, implementing, or maintaining a GHG emissions inventory
- Designing or developing GHG information systems
- Developing GHG emissions factors or other GHG-related engineering analysis
- Designing energy efficiency, renewable, or other projects which explicitly identify GHG reductions as a benefit
- Preparing or producing GHG-related manuals, handbooks, or procedures specifically for the CCX Member or Participant Member
- Appraisal services of carbon or GHG liabilities or assets
- Brokering in, advising on, or assisting in any way in carbon or GHG-related markets
- Management over health, environment and safety functions
- Legal and expert services unrelated to verification for CCX purposes

Conflicts of interest may occur if, in the previous 3 years, the CCX-Approved Verifier, any related organizations such as parent or subsidiary companies or other organizations

with which the CCX-Approved Verifier has a long-standing financial or legal relationship, or any of the staff that will be providing the verification services (regardless of whether such staff were employed by the CCX-Approved Verifier at the time) provided any of the services listed above.

In addition, a CCX-Approved Verifier is not allowed to provide any of the services listed above for at least 1 year following the cessation of performance of verification services for the CCX Member or Participant Member.

During the CCX Pilot Market Period, there is no maximum term for which a CCX-Approved Verifier may provide verification services to a CCX Member or Participant Member. However, in light of SEC rulings and other rules, laws, and regulations, regarding conflicts of interest for auditors and other professionals providing certification and verification services, this position may change if the CCX continues to function beyond the Pilot Market Period.

Other factors that may constitute a conflict of interest include, without limitation:

- If the CCX-Approved Verifier and the recipient of verification services share any board members or senior management.

- If there is a financial, functional or structural link (e.g. common ownership, contractual arrangement, or informal contract) between the CCX-Approved Verifier and the recipient of verification services, whether directly or through affiliated organizations (e.g. holding companies, parent companies, subsidiaries, formal partners, affiliates, etc.).

- If staff and senior management of the CCX-Approved Verifier are involved in <u>any</u> commercial, financial or other processes that might influence their judgment and render it not impartial or not objective.

<u>Process for Evaluating Statement of Conflicts of Interest:</u>

The statement will be evaluated by the CCX Offsets Committee which will recommend a suitable course of action in response to any potential or actual conflicts identified. The Offsets Committee may request additional information or a personal appearance in order to make their determination.

Organization Name: _____

Organization Website: _____

Mailing Address: _____

_____

_____

CCX Member or Participant Member Requesting Verification:

_____

Project Name: _____

Project Type _____

Instructions:

6. Please print out and complete this form.

7. On a separate sheet, please answer the questions overleaf.

8. Any other papers attached as evidence should be clearly numbered and indexed and attached behind your answer to the questions below.

Please Note:

All information submitted to CCX is strictly confidential.

All questions relating to any CCX-Approved Verifier, CCX Member or Participant Member shall include reference to any other organization with which such CCX-Approved Verifier, CCX Member or Participant Member has a financial, functional or structural link (e.g. common ownership, shared staff and management, contractual arrangement, or informal contract) such as a holding company, parent organization, subsidiary, formal partner or affiliate.

A CCX-Approved Verifier shall be responsible for identification of any form of conflict of interest it may face, even if that type of conflict of interest is not specified in this document.

CCX Conflict of Interest Questionnaire

1. Has your organization provided certification or verification services for the above-named CCX Member or Participant Member in connection with CCX or any other greenhouse gas trading, registry or other system during the previous three years? If yes, list the years and nature of the verification services provided.

2. Has your organization provided any non-verification services of any nature for this CCX Member or Participant Member during the previous three years? Are there any plans or contracts for your organization to continue to provide such services on an ongoing basis or in the future? If yes, what was the nature of the work performed? When was it performed? What was the scale of the work performed in dollars and/or percentage of your organization's revenue?

3. Document the structures and procedures in place in your company to identify potential or actual conflicts of interest and to avoid, mitigate or neutralize any potential or actual conflicts of interest identified. Identify steps taken in order to minimize any risks to your company's impartiality.

4. Identify all potential sources of conflict of interest that may arise if your organization performs verification services for the above-named CCX Member or Participant Member. If the potential conflict of interest may arise indirectly through an affiliated organization, please describe the nature of that link.

5. Please provide a list of names of the staff that may participate in providing verification services to the above-named CCX Member or Participant Members. For these staff, are there any instances of personal or professional relationships or financial interests that may represent a potential conflict of interest?

6. Provide details about the policies and structures your organization has put in place to avoid, mitigate or neutralize the specific conflicts of interest you have identified related to your organization's provision of verification services to the above-named CCX Member or Participant Member.

7. Are there particular reasons why this work should be considered sensitive, highly visible or subject to special scrutiny (e.g., press coverage, special Congressional interest, prior controversy, etc.)?

We hereby warrant the truthfulness of the answers to all questions on this form and the attached statement and documentation and to any other questions that may be asked by CCX or its designated representatives. We agree to maintain the accuracy and completeness of the information contained in this form and the attached statement and documentation.

We undertake to immediately notify CCX in writing about any material change in any information contained in this form and the attached statement and documentation.

We authorize CCX or its designated representatives to obtain information from sources that they deem appropriate in order to adequately evaluate and process this form and the attached statement and documentation and to ensure the integrity and effective operation of the CCX in the future.

We understand that failure to provide full and accurate information may result in the delay or rendering invalid of any decision made in response to the information contained in this form and the attached statement and documentation.

Signed and accepted by duly authorized representatives of:

_____
CCX-Approved Verifier

_____
Signature

_____
Print Name

_____
Title

_____
Date

_____
CCX Member or Participant Member

_____
Signature

_____
Print Name

_____
Title

_____
Date

☐ Completed CCX Conflict of Interest Questionnaire
☐ Additional materials attached as evidence, clearly numbered and indexed.

Appendix A.3 CCX Verifier Application Form

Thank you for your application to become a CCX-Approved Verifier. The thorough completion of this application is your responsibility. CCX-Approved Verifiers must comply with any and all laws, rules, regulations, orders, conditions of license, professional codes of conduct and CCX project guidelines applicable to the Verifiers' conduct of work for CCX Members and Participant Members. This application form is the means by which applicants for CCX-Approved Verifier status confirm that they are eligible for such status under the rules of the Chicago Climate Exchange as stated below.

Application procedure:

- Before applying, you are advised to obtain a copy of the CCX project guidelines for the types of project which your organization plans to verify. This will enable you to check that your organization is able to comply with the guidelines and to train your organization's staff about CCX's requirements for project verification.
- If your organization has been approved as a certifier by the California Climate Action Registry or if your organization is a CDM Designated Operational Entity, you may submit a copy of your application to the California Climate Action Registry or the CDM Executive Board in place of any relevant items listed on page 2 of this form.
- Your application may be reviewed by the appropriate CCX committees, which if necessary may recommend to CCX whether or not to accept the application. These committees may request additional information or a personal appearance in order to support the application.
- You will be informed whether your application has been approved within one calendar month of submission.
- In addition to submitting this form, you are required to submit the statement of conflicts of interest that can be obtained from CCX. This statement outlines any actual or potential conflicts of interest that may be created if your organization becomes a CCX-Approved Verifier. Before performing any verification work for CCX Members or Offset Providers, you will also be required to submit project-specific statements of conflicts of interest.
- Submit $500 Non-Refundable Application Fee

Please send the completed form and all attachments electronically (preferably). Please send original signature page to:

Jeffrey O'Hara
johara@theccx.com
Chicago Climate Exchange
190 S. LaSalle, Suite 1100
Chicago, IL 60603

Eligibility Criteria:

- Applicants shall have been in existence for at least four years and shall be in good standing under the laws of its jurisdiction of organization.
- Applicants shall have at least two years experience in greenhouse gas measurement, monitoring, verification or related activities.
- There shall not be any pending judicial process for malpractice, fraud and/or other activity incompatible with your functions as a CCX-Approved Verifier.
- Your organization shall have net worth of at least $1 million and carry **professional liability** (a.k.a. errors and omissions insurance) insurance coverage of at least $2 million applicable to your work as a CCX-Approved Verifier, including the valuation of any offset project and resulting issuance of Carbon Financial Instruments.
- All verification reports are subject to audit by the NASD. All CCX-Approved Verifiers must provide full cooperation to the NASD in its exercise of this audit function.

Please attach the following to your application:

a. Organizational documents providing evidence that your organization meets the eligibility criteria listed above.
b. Most recent certified financial statements (balance sheet and income statement). Publicly held entities must include a copy of their most recent 10K and 10Q filings.
c. Copies of your organization's **professional liability** insurance policy (CCX does not need a copy of your general liability insurance policy).
d. A minimum of three client reference letters for each field in which you are applying to become a CCX-Approved Verifier. Client reference letters must be written and signed by the client on client letterhead and include reference to the specific scope, nature and time period of the work your organization undertook. The letters must demonstrate your organization's ability to organize and manage a team of technical experts to effectively complete complex work tasks in a timely manner. Each client reference letter must also include a name of contact person, company and address, telephone and fax number and email address.
e. Documentation of your organization's management structure, document retention and quality assurance procedures.
f. Your organization's statement of conflicts of interest (this form can be obtained from CCX).
g. $500 Non-Refundable Application Fee

Applicant Information:

Organization Name: _____

Organization Website: _____

Mailing Address: _____

_____

_____

Contact for this Application: _____

Phone Number: _____

Fax Number: _____

Email Address: _____

Please indicate fields in which you are applying to become a CCX-Approved Verifier:

- Landfill methane collection and combustion projects ☐
- Agricultural methane collection and combustion projects ☐
- Forestry projects ☐
- Agricultural Soil Carbon ☐
- Energy Efficiency ☐
- Other ☐

You do not need to make a separate application for each field of work. You must submit three client reference letters as evidence of competence in each field of work for which you are applying to be a CCX-Approved Verifier. Your organization's statement of conflicts of interest should make specific reference to each field of work.

Designated Staff:

- No individuals will be allowed to provide verification services to CCX Members or Participant Members unless listed as designated staff on this form.

- Please fill out the following details for each staff member who will be carrying out verification activities. Please attach to this application form a short resume for each designated staff member, including job classification, relevant experience, education, academic degrees, professional licenses and the role of the staff member within your organization. (CCX is not responsible for determining the competence of any staff you designate on this form.)

- You must inform CCX in writing within 5 business days of any changes to this list.

- You may add or delete designated staff at any time by submitting amendments on this form. For any staff to be added, you must also attach a short resume containing the information listed above.

Primary Contact (this person must also sign this application form):

If other staff have the same address as the primary contact, it need not be repeated.

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

Other Designated Staff:
To add additional designated staff, please attach additional copies of the following page.

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

Other Designated Staff (continued):

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

Name:
Position/Title:
Fields of Expertise:
Address:
Phone Number:
Fax:
Email:

I hereby warrant the truthfulness of my answers to all questions on this application and to any other questions that may be asked by CCX or its designated representatives. I agree to maintain the accuracy and completeness of the information contained in this application throughout the application process.

I warrant that my organization meets all of the requirements to become a CCX-Approved Verifier. I further acknowledge and agree to abide by all the requirements and obligations for such status as specified in this application form and to follow the CCX project guidelines.

I acknowledge that verification must be conducted in conformance with CCX project guidelines, and that all such reports are subject to audit by the NASD and agree to provide full cooperation with NASD in its exercise of this audit function.

I undertake to immediately notify CCX in writing about any material change in any information contained in this application or upon becoming aware of any event that may impact on eligibility as a CCX-Approved Verifier.

I authorize CCX or its designated representatives to obtain information from sources that they deem appropriate in order to adequately evaluate and process this application.

I understand that failure to provide full and accurate information may result in this application being delayed, rendered invalid or denied.

I have read and agree to abide by the provisions of this form and CCX project guidelines.

Signed and accepted by a duly authorized representative of

_____.
(Organization)

_____
Signature

_____
Print Name

_____
Title

_____
Date

Application Checklist

- ☐ Organizational documents providing evidence that the applicant meets the eligibility criteria.
- ☐ Required financial statements.
- ☐ At least three client reference letters for each field of work.
- ☐ Documentation of management structure, document retention and quality assurance procedures.
- ☐ One short resume for each designated staff member.
- ☐ Statement of conflicts of interest.
- ☐ Evidence of Professional Liability Insurance.
- ☐ $500 Non-Refundable Application Fee

Appendix E

CHICAGO CLIMATE EXCHANGE

SOIL CARBON OFFSET AGGREGATOR MANUAL

TABLE OF CONTENTS

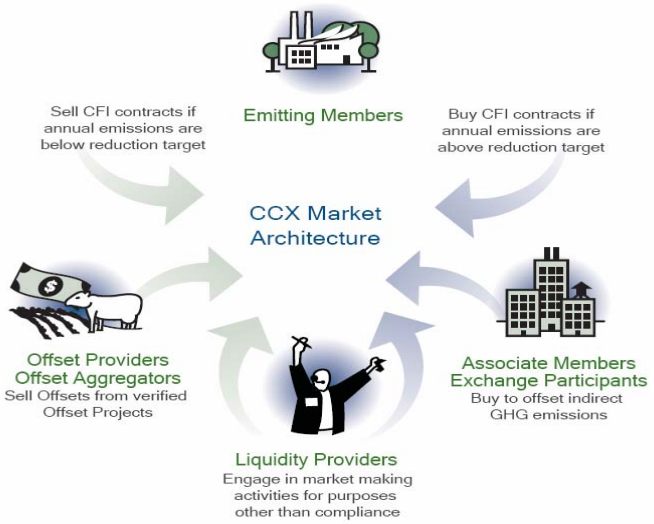
Introduction to CCX and the Offsets Program

Introduction

The Chicago Climate Exchange (CCX or the Exchange) is North America's only, and the world's first, legally binding multi-sector, rules-based and integrated greenhouse gas (GHG) emission registry, reduction and trading system. CCX employs independent verification and includes all six GHGs. CCX Members include corporations such as Ford, DuPont, International Paper and IBM; utilities such as American Electric Power, Tampa Electric and Central Vermont Public Service; academic institutions such as the University of Iowa and the University of Minnesota; non-governmental organizations such as World Resources Institute and Rocky Mountain Institute; public-sector entities such as the City of Chicago and the State of New Mexico.

CCX Members with direct emissions of greenhouse gases make a voluntary but legally binding commitment to reduce those emissions over time, in accordance with the CCX emission reduction schedule and rules. All Members will have reduced direct emissions 4% below a baseline period of 1998-2001 by the end of Phase I in December of 2006. Phase II, which extends the CCX reduction program through 2010, will require all Members to reduce greenhouse gas emissions 6% below baseline. Members that cannot reduce emissions internally must purchase Carbon Financial Instruments (CFI) contracts from other Members who make excess emission cuts, or from registered Offset Projects. See the Figure A: CCX Market Architecture, for an illustration of the market.

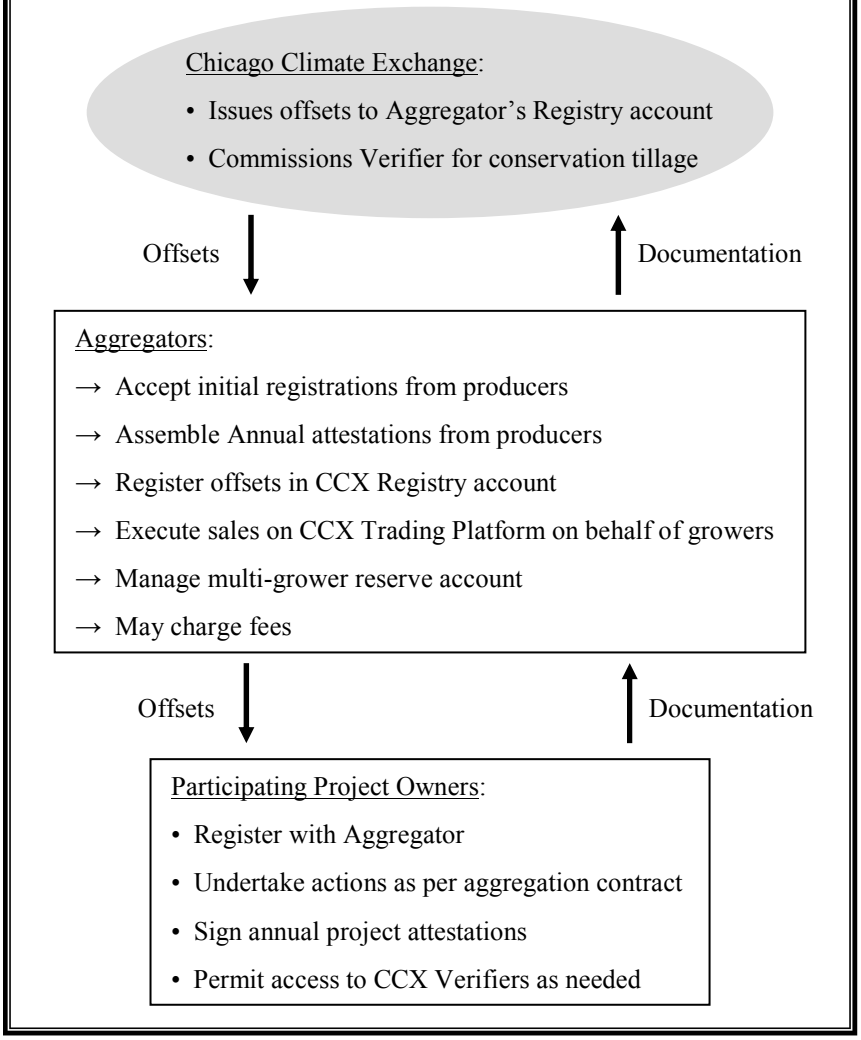
Figure A: CCX Market Architecture



Eligible agricultural Offset Project types include no-till and low-till farming, sustainable management of rangeland, grass and tree planting, and methane collection at livestock operations.

Offset projects can be enrolled on the Exchange by a CCX Member that has direct greenhouse gas emissions, or by an Offset Provider or Offset Aggregator. An Offset Provider is defined as an entity that does not have significant direct greenhouse gas emissions, and therefore would not qualify as an emitting Member, but does own one or more eligible Offset projects. An Offset Aggregator does not have significant direct greenhouse gas emissions either, nor does it directly own any Offset Projects, but rather enrolls projects from one or more project owners on the owners' behalf. The role, responsibilities and activities of Offset Aggregators will be detailed in this document and those of soil carbon Offset Aggregators in particular. See Figure B: Offset Aggregation Participation Structure.

Figure B: CCX Offset Aggregation Participation Structure



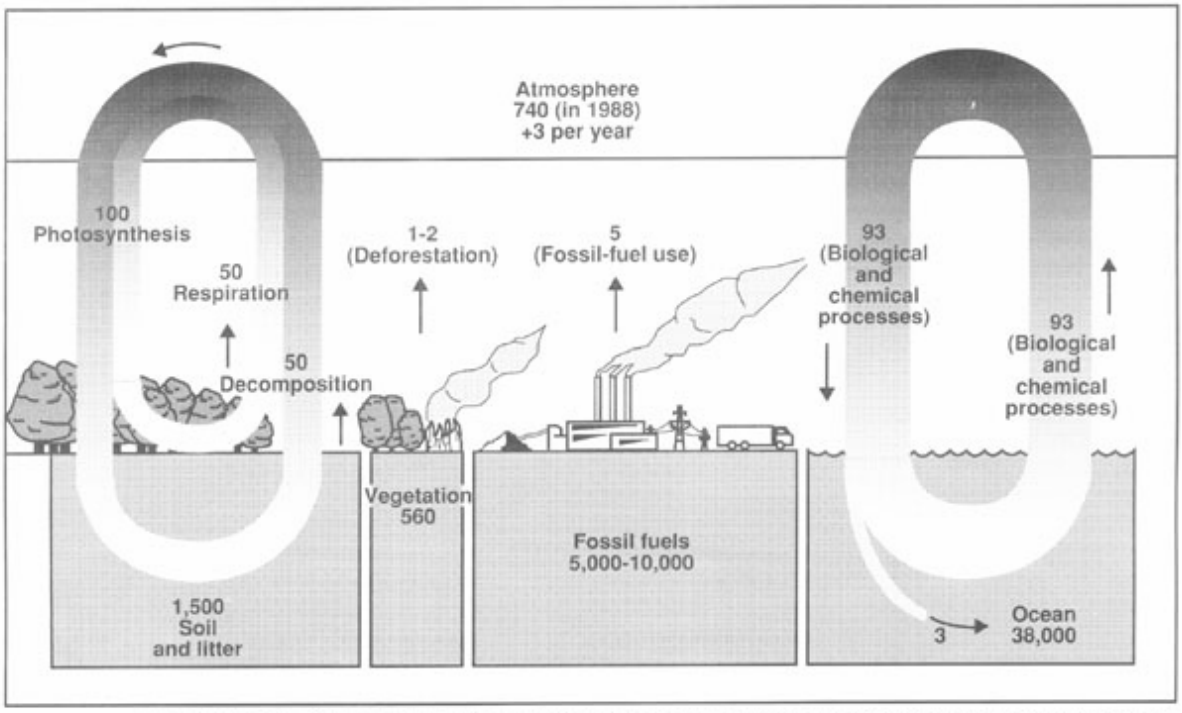
Background on Soil Carbon Sequestration

Agricultural and land use practices can both generate GHG emissions and serve as important GHG sinks, primarily of carbon dioxide in biomass and soils. Agriculture and land use changes account for approximately one third of annual anthropogenic increases in GHG emissions worldwide. All other human activities including industry, transportation, etc., account for the remaining two thirds of global GHG emissions. Agricultural GHG emissions are predominantly methane and nitrous oxide emissions (50%-75% of global CH_4 and N_2O emissions, primarily associated with livestock and fertilizer use, respectively), while only a small portion of global CO_2 emissions are related to fuel usage on farms, biomass burning and soil organic carbon decomposition (5%). Greenhouse gas emissions from land use are primarily CO_2 emissions from deforestation, biomass burning and cropland plowing.[1] Figure C is an illustration of the global carbon cycle that includes vegetation and soil.

1 R. Lal et al.

Figure C – Global Carbon Cycle[2]

Global carbon cycle. Notice that the soil stores about 3 times more carbon than all of Earth's vegetation.
[Carbon fluxes and reservoirs are in billions of metric tons of carbon.]



Source: United States Office of Technology Assessment. 1991. Changing by degrees: Steps to reduce greenhouse gases. Washington, DC.

Agricultural and land use practices can be altered to both reduce direct emissions of GHGs, and to generate additional GHG "sinks" in soil and biomass. As the focus of this manual is on soil carbon sequestration, this discussion will spotlight opportunities to increase stored soil organic carbon levels in cropland and grassland. Readers should refer to U.S. Department of Agriculture (USDA) publications and other online material for additional information on managing CH_4 emissions from livestock and N_2O emissions from fertilizer use (online: www.usda.gov).

The Soil Carbon Cycle and Tillage Practices

Carbon dioxide gas is converted to stored organic carbon through plant photosynthesis, whereby carbon dioxide, water and sunlight are converted to oxygen, sugars and water. Organic carbon is stored in plant matter as part of the sugar molecule, and carbon dioxide enters the soil via a plant's root system through a process called carbon mineralization. Crop residues left on a field also return carbon to the soil as a result of decomposition.

2 Agriculture and Climate Change: RCA Issue Brief #3. October 1995. NRCS NRCS USDA: http://www.nrcs.usda.gov/Technical/land/pubs/ib3text.html

Tillage practices that minimize soil disturbance are generally known as "conservation tillage," and, depending on the region and soil type, can result in enhance soil carbon sequestration. Chicago Climate Exchange awards continuous conservation tillage in designated states with CCX Offsets; the Offsets program is discussed in further detail in the following section. The USDA Natural Resources Conservation Services (NRCS) defines conservation tillage as, "Any tillage and planting system in which at least 30 percent of the soil surface is covered by plant residue after planting to reduce soil erosion by water; or where soil erosion by wind is the primary concern of at least 1,000 pounds per acre of flat small grain residue equivalent are on the surface during the critical erosion period" (USDA NRCS National Resources Inventory). Conventional tillage, on the other hand, involves plowing or intensive tillage and leaves less than 15% residue cover after planting, or less than 500 pounds per acre of small grain residue on the land.[3]

Table 1 presents annual figures for changes in soil carbon stock in U.S. cropland; figures in parentheses indicate net loss of carbon stock. While annual carbon sequestration in mineral soils has declined since 1990, it still represents a valuable U.S. carbon sink. The net increase in soil carbon stocks is attributed to land enrolled in the USDA's Natural Resource Conservation Service Conservation Reserve Program, intensification of crop production in semi-arid regions, increased hay production and adoption of reduced and no-till conservation tillage practices.[4]

Table 1 - Net Soil Carbon Stock Changes in Cropland Remaining Cropland (MMtons CO_2e)

Soil Type	**1990**		**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Mineral Soils	67.7		59.6	59.3	60.7	62.5	62.8	62.7	63.2
Organic Soils*	(29.9)		(30.3)	(30.3)	(30.3)	(30.3)	(30.3)	(30.3)	(30.3)
Net Sequestration	**37.8**		**29.3**	**29.0**	**30.4**	**32.2**	**32.5**	**32.4**	**32.9**

** Also includes emissions due to drainage of organic soils on land converted to cropland*

Source: U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2004. U.S. Environmental Protection Agency

Table 2 presents the same soil carbon sequestration and emission figures for land converted to grasslands. The CCX Offsets program also awards soil sequestration Offsets to agricultural lands converted to permanent grassland in designated regions.

Table 2 - Net U.S. Soil Carbon Stock Changes in Land Converted to Grassland (MMtons CO_2e)

Soil Type	**1990**		**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Mineral Soils	17.6		21.1	21.1	21.1	21.1	21.1	21.1	21.1
Organic Soils*	(4.3)		(4.6)	(4.6)	(4.6)	(4.6)	(4.6)	(4.6)	(4.6)
Net Sequestration	**13.3**		**16.5**	**16.5**	**16.5**	**16.5**	**16.5**	**16.5**	**16.5**

** Includes emissions from grassland remaining grassland and drainage of organic soils in land converted to grassland*

Source: U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2004. U.S. Environmental Protection Agency

3 USDA NRCS National Resources Inventory. NRI-92. Available online: http://www.nrcs.usda.gov/technical/land/meta/m4124.html

4 U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2004. U.S. Environmental Protection Agency

Using This Guide

This document is intended to familiarize a prospective Offset Aggregator with the Chicago Climate Exchange, the soil carbon offsets program and the role of Aggregators in that program. Readers should first review Chapter One, the list of definitions used specifically in CCX, as these terms appear throughout this guide. Chapter Two provides technical information on the soil carbon offsets program, including project eligibility requirements. Chapter Three provides an introduction to the role of Offset Aggregators in CCX, as well as information pertaining to qualifications for Exchange membership.

Chapter Four, Designing the Aggregation Program, is the first chapter to delve into the activities expected of the soil carbon Offset Aggregator. Chapter Four guides prospective Aggregators through the initial assembly of a pool of soil carbon offset projects. Chapter Five will serve to introduce Aggregators to the outreach process, in which the Aggregator enrolls individual project owners and enrolls them in the offsets pool. Chapter Six covers the verification process, in which the carbon sequestration performance of the offsets pool is audited by a third party to validate offset credits generated prior to formal Carbon Financial Instrument crediting. Chapter Seven deals with the review of the verification report and official offset crediting, as well as the Aggregator's electronic Registry account. Chapter Eight serves as a guide to selling Carbon Financial Instrument contracts on the electronic CCX platform and distributing the revenue to project owners, if applicable. Chapter Nine contains case studies of soil carbon aggregation pools currently enrolled on the Exchange.

Relevant appendices are included at the end of this Manual.

Chapter 1: Definitions

The following are definitions specific to the Chicago Climate Exchange greenhouse gas emission reduction and offset trading program, and are used throughout this document.

"Aggregator" is a Participant Member that serves as an administrative representative, on behalf of Project Owners, of multiple CCX-qualifying Exchange Offset Projects.

"Authorized Trader" is either an employee or a contracted agent of a CCX Registry Account Holder that is authorized to receive access privileges to the CCX Trading Platform and CCX Registry as determined by the relevant Registry Account Holder.

"Banking" is the retention of a Carbon Financial Instrument in a CCX Registry Account for use or sale in a later year.

"Carbon Financial Instrument" (referenced herein as "Carbon Financial Instrument" contract and "CFI" contract) is a CCX Exchange Allowance ("XA"), Exchange Offset ("XO"), or Exchange Early Action Credit ("XE") which represents one hundred (100) metric tons of carbon dioxide or carbon dioxide equivalent and that is issued by CCX to the Registry accounts of CCX Members and are surrendered to the Exchange by Members to annually achieve compliance with the CCX Emission Reduction schedule.

"Carbon Stock" is a quantity of carbon stored in soils or biomass, expressed in metric tons carbon dioxide equivalent.

"Carbon Storage" is the retention of carbon in biomass, in soils, or in geologic formations.

"Cash Transaction" is a privately negotiated transaction between parties.

"CCX Clearing Mechanism" is the CCX mechanism for settling and assuring payment for transactions executed on the CCX Trading Platform.

"CCX Emission Reduction Schedule" is the quantitative schedule of direct emission reductions that each CCX Member commits to undertake.

"CCX Members" (also referenced herein as "Members") include corporations, municipalities and other Entities that emit Greenhouse Gases from facilities located in countries and regions approved by CCX and commit to the CCX Emission Reduction Schedule. CCX Members are one of the four classes of CCX Registry Account Holders.

"CCX Participant Members" are Offset Providers, Aggregators, Liquidity Providers and intermediaries that trade or transact on CCX but do not have an Emission Reduction Schedule.

"CCX Registry" (also referenced herein as "Registry") is an electronic database that will serve as the official holder of record and transfer mechanism for Carbon Financial Instruments owned by CCX Registry Account Holders.

"CCX Registry Account" is a data file in the CCX Registry that provides a record of all holdings and Transfers of CCX Carbon Financial Instruments for each CCX Registry Account Holder.

"CCX Registry Account Holder" (also referenced herein as "Registry Account Holder") is a CCX Member, Associate Member, Participant Member or Exchange Participant.

"CCX Registry Retirement Account" (also referenced herein as "Registry Retirement Account") is an account for holding all CFI contracts that have been retired for compliance or other purposes. CFI contracts in this account cannot be sold or transferred.

"CCX Trading Platform" is an electronic, internet-accessible system for posting and accepting bids to buy and offers to sell CCX Carbon Financial Instruments.

"Conservation Tillage" includes practices defined in the Natural Resources Conservation Service National Handbook of Conservation Practices. These practices are:

(1) No-till/Strip-till - Managing the amount, orientation, and distribution of crop and other plant residue on the surface year-round while growing crops in narrow slots or tilled or residue-free strips in soil previously untilled by full width inversion implements;
(2) Ridge-till - Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round while growing crops on preformed ridges alternated with furrows protected by crop residue.

"Direct Emissions" are Greenhouse Gas emissions released on-site as a result of fuel combustion (e.g. use of fossil fuels in heating and cooling, production of electricity, vehicles), processing activities (e.g. production of adipic acid or cement) or fugitive emissions (e.g. gases leaked from joints or seals in electricity transmission equipment or gas pipelines) from facilities owned by a CCX Member.

"Eligibility Criteria" are the standards applied in defining CCX Offset Projects.

"Eligible Commercial Entity" is an entity or person that meets the conditions established in paragraph 1(a)(11) of the U.S. Commodity Exchange Act.

"Eligible Projects" are Offset Projects that conform to CCX rules and thus can be registered with CCX, allowing the Project Owner to receive Exchange Offsets.

"Exchange" means the Chicago Climate Exchange and its divisions, but is exclusive of its subsidiaries or affiliates.

"Exchange Allowance (XA)" is a tradable Carbon Financial Instrument issued to: (1) each CCX Member in accordance with its Emission Baseline and Emission Reduction Schedules; (2) a CCX Member that elects to include electricity purchases as a supplemental reduction objective if such Member reduces electricity purchases beyond the CCX Purchase Reduction Schedule; and, (3) CCX Members in the commercial forestry sector that realize net increases in Carbon Stocks using the model-based accounting approach.

"Exchange-cleared Trade" is a Transaction entered on the CCX Trading Platform and settled via the CCX Clearing Mechanism.

"Exchange Offset" ("XOs") is a tradable Carbon Financial Instrument generated by qualifying mitigation Projects and registered with CCX by CCX Members and CCX certain Participant Members. The categories of Exchange Offsets are: Exchange Forestry Offsets, Exchange Methane Offsets, Exchange Soil Offsets and Exchange Renewable Energy Offsets.

"Exchange Soil Offset" ("XSOs") is an Exchange Offset issued to owners of Greenhouse Gas mitigation produced by eligible agricultural soil carbon sequestration activities in designated areas of the U.S. and Canada.

"Greenhouse Gases" are gases that cause radiative forcing when present in the earth's atmosphere. For CCX purposes, these gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

"Liquidity Provider" is an entity or person who trades on the Exchange for reasons other than compliance with the CCX Emission Reduction Schedule.

"Metric Tons Carbon Dioxide Equivalent" is the quantity of Greenhouse Gases, expressed in carbon dioxide equivalence, equal to 2,205 pounds. Metric tons of non-CO_2 greenhouse gases are converted using the IPCC 100 year global warming potential conversion factors.

"Offset Project" is a CCX-registered Project that is issued Exchange Offsets in reflection of the amount by which the Project reduces, sequesters or avoids Greenhouse Gas emissions.

"Offset Provider" may be a Project implementer or a CCX-registered Aggregator, that registers CCX-eligible Projects with the Exchange and can sell Exchange Offsets.

"Owned and Operated Project" is a CCX-eligible Project that is operated by a CCX Member or Associate Member and for which Exchange Offsets and Exchange Early Action Credits may be issued.

"Pooled Projects" are the multiple Projects that are represented in CCX by a single Aggregator.

"Project" is a CCX-eligible action or facility that causes a reduction in Greenhouse Gas emissions or causes an increase in carbon storage in trees, forests or soils. A CCX-registered Project can encompass multiple locations, facilities or land parcels, provided such multiple sites are subject to functionally similar Project activities.

"Project Category" is a grouping of functionally similar Projects. The following are examples of CCX Project categories: Methane Projects; Forestry Projects, Soil Carbon Projects.

"Project Owner" is the entity that is the legal owner of Offsets produced by a CCX-eligible registered Project. A Project Owner may represent one or more ultimate owners of Exchange Offsets produced by one or more Projects.

"Project Registration Filing" is the act of submitting to CCX all documentation required in order to register a Project with the Exchange.

"Project Report" is a report submitted to CCX (either directly or through an Aggregator) for the purpose of notifying CCX of the ongoing effectiveness of a CCX-registered Project. In some cases a Project Report must include an attestation by a CCX-approved Verifier as to the quantity of mitigation effectiveness and Exchange Offset issuance prepared in conformance with the rules provided herein, and with the verification protocols prescribed by the Exchange.

"Provider of Regulatory Services" is an entity designated by the Exchange to: audit Emission Baselines, annual True-up and Offset Project verifications; provide market oversight and compliance procedures; and utilize market surveillance technologies to monitor trading activity and prevent fraud and manipulation.

"Registered Offset Advisor" is an academic or non-governmental organization with accepted expertise to provide advise to CCX on the suitability and reputation of offset projects.

"Soil Carbon Reserve Pool" is an entry in a CCX Registry Account into which each Exchange Soil Offset Project is required to place 20% of the Offsets it earns.

"Super Reductions" are Carbon Financial Instruments that represent emission reductions beyond the Maximum Recognized Emissions Reductions or increases in Carbon Stocks beyond the Maximum Recognized Increase in Carbon Stocks. Super Reductions may be sold to non-Members but are not usable for compliance by CCX Members.

"Tillage" is one of various silvicultural activities that loosen the soil structure in a plantation with the aim of increasing rooting volume.

"Transaction" is a commercial agreement that provides for the transfer of Carbon Financial Instruments. The three categories of transactions that can be executed in CCX are:

(1) CCX Exchange-cleared Trades;
(2) Bilateral Trades; and,
(3) Block Trades.

"Transfer" is the movement of a CCX Carbon Financial Instrument from one CCX Registry Account to another. Transfer implies the conveyance from transferor to transferee of full legal title to all Greenhouse Gas reduction and mitigation rights associated with transferred Carbon Financial Instruments.

"Verifier" is an entity that is approved by CCX to conduct verification of CCX Exchange Offset Projects. With the exception of certain small Projects, each Project Registration Filing and Periodic Project Report must be accompanied by a verification statement signed by a CCX-approved Verifier.

"Vintage" is the first Compliance Year for which a CCX Carbon Financial Instrument may be used in achieving Compliance with a CCX Member's or Associate Member's Emission Reduction Schedule or Electricity Purchase Reduction Schedule.

Chapter 2: Soil Carbon Offsets

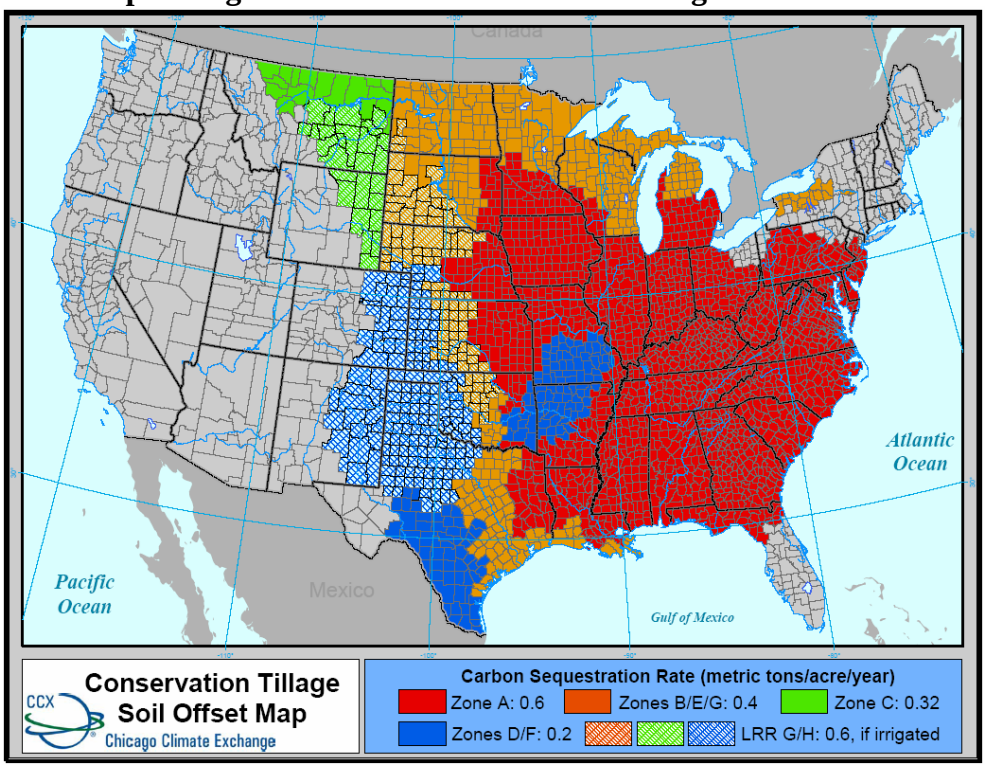
Eligible Projects and Offset Issuance Rates

Conservation Tillage

Conservation tillage projects involving specified agricultural soil carbon sequestration activities in designated states, counties and parishes in the United States and Canada shall be eligible to earn soil carbon Offsets as per the following region- and offset activity-specific provisions

Eligible conservation tillage practices vary by region and are broadly outlined by zones in the sections below. Practices and implements not found below may be considered by CCX on case by case basis. CCX eligible practices generally follow the NRCS guidelines for conservation tillage5. While ridge till is included under the definition of conservation tillage provided by NRCS, it will not be eligible for Exchange Soil Offsets. As a general rule the tillage practice must leave at least 2/3 of the soil surface undisturbed with at least 2/3 of the residue remaining on the field surface.

Figure 2.1 –Map of Eligible Areas for Conservation Tillage



5 For CCX purposes Conservation Tillage is as defined in the Natural Resources Conservation Service National Handbook of Conservation Practices.

Zone A:

States and counties included in Zone A are provided in Appendix 1. Soil Offsets will be earned at a rate of 0.6 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Continuous cotton, soybeans and pulse crops (i.e. beans, peas, lintels, etc.) are eligible only if there is a cover crop;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- Histosol soils in NRCS Land Resource Region (LRR) T are not eligible;
- In general if the implement would require that a leveling or smoothing activity follows, it would likely result in too much soil disturbance
- Fallowed acres are not eligible in this region;
- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone B:

States and counties included in Zone B are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- For the North Dakota portion of Zone B, adherence to the cropping and implementation guidelines outlined below should at a minimum be reflective of management practices resulting in a Soil Tillage Intensity Rating (STIR) of 20 or less and a Soil Conditioning Index (SCI) or 0.3 or greater (USDA-NRCS North Dakota Conservation Practice Standard 329, September 2005);
- Continuous soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;

- Irrigated acreage in LRR G of Zone B (LRR G counties indicated in appendix 1) is eligible for enrollment provided that the acreage began irrigation in crop years prior to the date of this advisory. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Fallowed acres are not eligible in this region;
- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone C:

States and counties included in Zone C are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.32 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Continuous soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
- Irrigated acreage in LRR G of Zone C (LRR G counties indicated in appendix 1) is eligible for enrollment provided that the acreage began irrigation in crop years prior to the date of this advisory. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Chemical fallowed acres in Major Land Resource Areas (MLRA) 52, 53A, and 54 (county listings provided in appendix 1) are eligible in this region but

will not receive Exchange Soil Offsets for the years in which fallow takes place. Non-fallow years will receive Exchange Soil Offsets at a rate of 0.32 metric tons per acre per year;

- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs

Zone D:

States and counties included in Zone D are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Irrigated acreage in LRRs H and G of Zone D (LRR H and LRR G counties indicated in appendix 1) is eligible for enrollment provided that the acreage began irrigation in crop yeas prior to the date of this advisory. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
- Continuous cotton , soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Fallowed acres are not eligible in this region;
- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone E:

States and counties included in Zone E are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Irrigated acreage in LRR H of Zone E (LRR H counties indicated in appendix 1) is eligible for enrollment provided that the acreage began irrigation in crop years prior to the date of this advisory. Exchange Soil Offsets will be issued to eligible irrigated acres at a rate of 0.6 metric tons per acre per year;
- Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
- Histosol soils in Land Resource Region T are not eligible;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Fallowed acres are not eligible in this region;
- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone F:

States and counties included in Zone F are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Fallowed acres are not eligible in this region;

- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone G:

States and counties included in Zone G are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous conservation tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

- Continuous cotton, soybeans or pulse crops (i.e. beans, peas, or lintels) are eligible only if there is a cover crop;
- Eligible implements include but are not limited to: no-till drill, no-till and strip-till planters, rolling harrows, low disturbance liquid manure injectors, anhydrous ammonia applicator, manure knife applicator, sub-soil ripper with at least 24 inch shank spacing;
- Ineligible implements include but are not limited to: field cultivators, tandem disk, offset disk, chisel plow, moldboard plow;
- In general if the implement would require that a leveling or smoothing activity follow, it would likely result in too much soil disturbance;
- Fallowed acres are not eligible in this region;
- No Exchange Soil Offsets will be issued in years in which residue removal and/or burning occurs.

Zone H:

Canadian provinces included in Zone H are Manitoba, Saskatchewan and Alberta. Rural municipalities having black and gray soils are eligible to earn Exchange Soil Offsets at a rate of 0.4 metric tons per acre per year to land managers who commit to continuous zero or no-tillage for years 2006 through 2010 on acres specified upon project registration. Rural municipalities having brown and dark brown soils are eligible to earn Exchange Soil Offsets at a rate of 0.2 metric tons per acre per year to land managers who commit to continuous zero or no-tillage for years 2006 through 2010 on acres specified upon project registration. General eligibility criteria and practices for the region include but are not limited to the following:

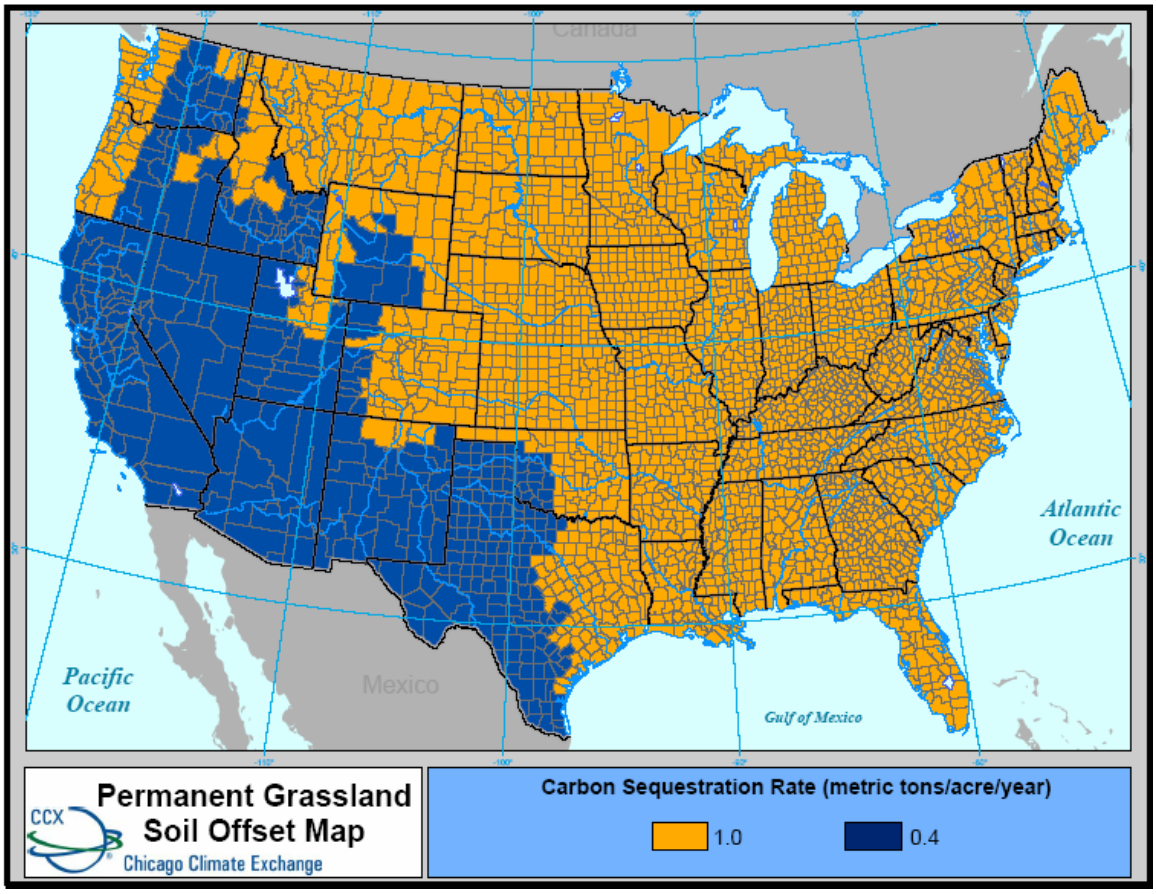
- Seeding must take place via direct seeding into standing stubble using a narrow opener, with not more than 1/3 of the seedbed disturbed. For example, a three inch opener on a nine inch row spacing, or a four inch opener on a 12 inch row spacing;

- Chemical fallowed acres in Canada are eligible in this region but will not receive Exchange Soil Offsets for the years in which fallow takes place;
- Tillage fallow is not permitted;
- Exchange Soil Offsets will not be issued to enrolled acreage in the years in which a flax crop is grown;
- Secondary fertilizer application is permitted during crop growth provided it is applied with a narrow opener or via broadcast or surface banding methods;
- Deep banding is permitted provided that the implement does not result in heavy soil disturbance including leveling or smoothing the soil after application. For example, a maximum of a 1.5 inch knife on nine inch spacing, or a two inch opener on 12 in spacing is acceptable;
- Liquid manure injectors are permitted provided that the implement does not result in heavy soil disturbance including leveling or smoothing the soil after application;
- For years in which residue burning and/or removal occurs no credit will be issued on the affected acreage. This includes chaff removal, straw removal/bailing.
- Cultivation of any kind is prohibited;
- Heavy harrowing including a Phoenix harrow is not permitted.

New Grassland Planting

Parties that convert or, who have converted land since January 1, 1999, to permanent grasses may be eligible offsets on the basis of increases in carbon stocks realized on those acres. Currently there are two offsets issuance rates for US as illustrated in Figure 2.2

Figure 2.2 –Map of Eligible Areas for New Grassland Planting



Zone A:

States and counties included in Zone A are provided in Appendix 1. Canadian provinces of Manitoba, Saskatchewan, Alberta and British Columbia are included in Zone A.[6] Exchange Soil Offsets will be earned at a rate of 1.0 metric tons per acre per year to land managers who commit to maintain increases in soil carbon stocks realized as a result of

6 For eligible regions within Canada, please contact CCX Staff.

grass cover plantings that were undertaken on or after January 1, 1999. Such grass cover must be maintained through 2010 on the acres specified upon project registration.

Zone B:

States and counties included in Zone B are provided in Appendix 1. Exchange Soil Offsets will be earned at a rate of 0.4 metric tons per acre per year to land managers who commit to maintain increases in soil carbon stocks realized as a result of permanent (i.e. not harvested) grass cover plantings that were undertaken on or after January 1, 1999. Such grass cover must be maintained through 2010 on the acres specified upon project registration.

Sustainable Rangeland Management

Exchange Soil Offsets (Rangeland Soil Sequestration)

Exchange Soil Offsets may also be issued to land owners who commit to increase Carbon Stocks realized on managed rangelands in approved geographic areas. Eligible projects include:

a) Non-degraded rangeland managed to increase carbon sequestration through grazing land management that employ sustainable stocking rates, rotational grazing and seasonal use in eligible locations.
b) Restoration of previously degraded rangeland through adoption of sustainable stocking rates, rotational grazing and seasonal use grazing practices initiated on or after January 1, 1999.

Exchange Soil Offsets will be earned at a specified rate of metric tons CO_2 per acre per year in eligible geographic areas. Verification shall be conducted in accordance with provisions contained in Chapter 10 of the CCX Rulebook.

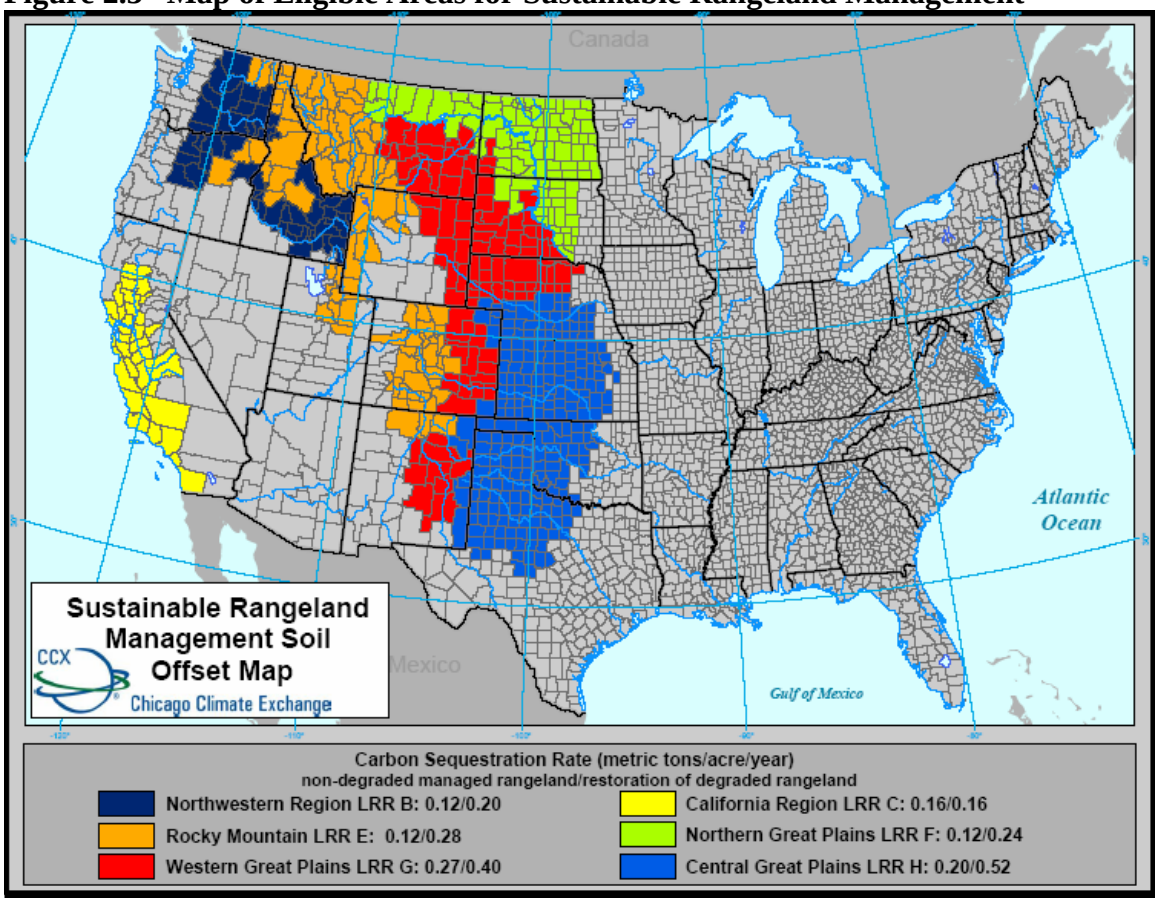
Eligible Project locations, Offset Issuance Rates

Eligible rangeland soil carbon management Offset Issuance rates are based on below-ground carbon sequestration rates established for designated Land Resource Regions. Additional Land Resource Regions may be added to the regions listed in Appendix 1. Issuance rates may also reflect the status of the land (degraded or non-degraded) prior to inception of project.

Eligible geographic areas are defined according to USDA Land Resource Region (LRR). Rangeland projects are also bounded by average annual precipitation levels for the specific region. Rangeland projects must take place in areas where long-term annual average precipitation is not less than 14" and not greater than 40".

Rangeland Soil Carbon Management Offset Issuance rates are listed below in metric tons CO_2 per acre per year and illustrated in Figure 2.3:

Figure 2.3 –Map of Eligible Areas for Sustainable Rangeland Management



Northwestern Wheat and Range Region (LRR B)

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.12	0.20

California Subtropical Fruit, Truck, and Specialty Crop Region7 (LRR C)

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.16	0.16

Rocky Mountain Range and Forest Region (LRR E)

Sequestering practices on	Restoration of

7 In this region, a key feature of the landscape is the Oak tree layer interspersed within rangelands. Research has shown that the native Oak trees have a positive impact on nutrient cycling, productivity and carbon storage in the soil system. Projects must have left the tree layer intact in order to qualify for Offsets.

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.12	0.28

Northern Great Plains Spring Wheat Region (LRR F)

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.12	0.24

Western Great Plains Range and Irrigated Region (LRR G)

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.27	0.40

Central Great Plains Winter Wheat and Range Region (LRR H)

Sequestering practices on non-degraded managed rangeland	Restoration of degraded rangeland
0.20	0.52

Provided the project owner is able to present documentation sufficient to allow independent verification that recognized grazing practices have taken place historically, qualifying lands and practices may be issued CCX Rangeland Soil Carbon Management Offsets for the years 2003 and later.

Evidence of Alternative Soil Carbon Accumulation Rates

An Owner of an Exchange Soil Offset Project may be issued additional offsets if they present evidence that actual increases in soil carbon exceed the rates stipulated above, provided such evidence is deemed acceptable by the Committee on Offsets.

In forming these recommendations, the Committee may observe the follow principles:

- Eligibility criteria and Offset issuance quantities shall reflect the best available scientific and technical information, as evidenced by peer-review published studies and other high-quality research findings
- Conservative Offset issuance rates (e.g., application of discounted Offset values, use of Carbon Reserve Pool)
- Balancing requirements for adequate documentation and verification of environmental effectiveness with the goal of minimizing transaction costs
- Compatibility with emerging international standards
- Avoidance of negative environmental and social impacts

Soil Carbon Reserve Pool

Each CCX Exchange Soil Offset Project shall be required to place 20% of the Offsets it earns into a CCX Soil Carbon Reserve Pool. Such Offsets shall remain the property of the Project Owner(s) (pool participants in the case of aggregated Projects) and all Offsets that remain in the Soil Carbon Reserve Pool shall be released to Project Owners near the end of the contract period. In the event that Project Owner does not conform to the CCX Soil Offset performance requirements it shall be promptly reported to CCX. Such reporting shall occur through the Project Aggregator. CCX will then cancel Offsets held in the Soil Carbon Reserve Pool in an amount equal to the quantity of Offsets issued to the non-compliant acres. Project Aggregators may wish to replenish the Soil Carbon Reserve Pool by replacing the Offsets that are cancelled in instances of Project non-performance.

In the case of complete noncompliance with the terms and conditions for CCX Soil Offsets, the owner of the noncompliant Project shall transfer to the Soil Carbon Reserve Pool (as specified below) a quantity of CCX Offsets and/or Allowances that is equal to the total quantity of Soil Offsets that had been issued to the Project during the time of registration. The Owner of the non-performing Project shall be prohibited from further participation in CCX.

Verification

Unless otherwise specified, project owners (with administrative assistance provided by Aggregators) are responsible to pay for verification of the enrolled acres in their pool. Project owners may use any Verifier approved by CCX to conduct in-field inspections of enrolled Soil Offset Projects. In certain instances CCX may contract for verification of a pool but the Project Aggregators are responsible to coordinate effective field verification on enrolled acres. Such verification shall determine field conditions, documentation of Project start dates (when applicable) and other records as may be specified by CCX. See Chapter 6 of these guidelines for detailed information on the verification process.

Chapter 3: Becoming an Offset Aggregator on CCX

Introduction

The Offset Aggregator is the entity that serves as the administrative representative, on behalf of offset project owners, of multiple offset-generating projects. Chicago Climate Exchange recommends that offset projects involving less than 10,000 metric of CO_2 equivalent per year should be registered through an Offset Aggregator to simplify project enrollment and to minimize transaction costs for the project owner. An Offset Aggregator has the contractual right to enroll and trade the greenhouse gas emission benefits associated with one or more project owned by another entity. Further the Aggregator has the responsibility to act as the project's representative on the Exchange in all matters relating to initial qualification, verification, and enrollment and sale of the related carbon dioxide equivalent offset credits.

Figure 3.1 – Aggregator's Role on CCX

- Design the aggregation program
- Identify and enroll program participants
- Collect participation contracts from individual growers
- Contract with Verifier to verify Offset generation and compile Verification Report for submittal to CCX
- Sell Offset-derived Carbon Financial Instruments on the CCX Trading Platform

An Aggregator shall undertake all of the following actions on behalf of CCX-registered Projects it represents:

1. Accept initial registration forms from owners of CCX-eligible projects.
2. Assemble project reports from Project Owners and retain copies of project verification records.
3. Submit offset registration fees to CCX.
4. Have sole authority to access the Registry Account(s) holding the offsets issued to projects it represents and to access the CCX Trading Platform as an Authorized Trader.
5. Execute sales on the CCX trading platform on behalf of Project Owners and distribute sales proceeds to Project Owners in accordance with the terms agreed upon between the Aggregator and Project Owners.
6. Coordinate verification on behalf of Project Owners.

The terms of the business and legal relationships between Aggregators and Project Owners are left to the discretion of those parties.

Application for Chicago Climate Exchange Membership

The first step towards becoming an active Offset Aggregator on the Chicago Climate Exchange (CCX) is to familiarize oneself with the program and apply for membership. Thorough review of this document, *Carbon Credit Aggregation Procedures*, should serve to familiarize one with the CCX Offsets program and the role of Aggregators. Exchange staff is available for additional, one-on-one consultation.

Qualifications for Membership

The following are the general requirements to join CCX as an Offset Aggregator, and are discussed in further detail in the remainder of this chapter:

1. The applicant must demonstrate the ability to independently organize and administer a pool of Offsets.
2. The applicant must qualify as an Eligible Commercial Entity as defined in the United States Commodity Exchange Act.
3. The applicant must not have significant direct greenhouse gas emissions from its own operations.
4. The applicant must successfully complete a CCX Membership Application for Participant Membership.
5. The applicant must submit all relevant enrollment, annual and transaction fees.

When joining CCX, an Offset Aggregator makes a legally binding commitment to remain a CCX member through December 31, 2010, and maintain project enrollment through that date.

Demonstration of Technical Capacity

In addition to meeting the general qualifications for CCX membership, an Offset Aggregator must demonstrate the ability to independently organize and administer a pool of offsets. This should include a mastery of the technical aspects surrounding a project's capacity to measurably sequester greenhouse gases and the ability to represent the project's attributes to CCX staff, the third-party verifier and other parties to the Exchange. The rules and procedures contained in this guide, as well as the CCX Rulebook, should be fully understood by the Aggregator. The Aggregator should familiarize him- or herself with the Exchange's electronic Registry, trading platform and other pertinent market components, either before or after applying for membership.

Eligible Commercial Entity Status

Due to the Chicago Climate Exchange's regulatory status, an entity wishing to open a Registry Account and trade actively on the electronic CCX trading platform must qualify as an Eligible Commercial Entity ("ECE") as defined in the United States Commodity Exchange Act. There are four categories under which an applicant can qualify as an ECE, although an applicant need only qualify under one of these categories. For a corporation, partnership, proprietorship, organization, trust other entity that is not a financial institution, insurance company, governmental entity, regulated broker/dealer or investment bank holding company, the primary qualifications are related to total assets and/or net worth. A questionnaire to determine ECE qualification status is contained in Appendix 2.

Determination of Project Owner's Greenhouse Gas Emissions

An entity wishing to enroll owned projects on the Exchange, either directly as an Offset Provider or indirectly via an Offset Aggregator, must not have significant direct greenhouse gas emissions from its own operations. If it does have significant greenhouse gas emissions, it must join the Exchange as an emitting Member. While an emitting Member of the Exchange may enroll offset projects, a Member is subject to separate and additional reporting requirements, annual emission reduction requirements, Carbon Financial Instrument contract sales and banking limits and other regulations and is subject to different membership fees.

An entity may have significant direct greenhouse gas emissions if it owns any major assets or group of assets that consumes non-renewable fuels such as coal, oil, natural gas, municipal solid waste, etc. For example, an industrial entity that owns a number of manufacturing facilities, or a municipal government that owns electric power generation, may qualify as a Member and therefore be ineligible to join the Exchange in solely an offset enrollment capacity. Generally speaking, independent farms would not quality as Members.

If an Aggregator suspects a project owner's operations are vast enough to generate a significant level of direct greenhouse gas emissions from fossil fuel combustion, the Aggregator should work with the project owner to estimate annual greenhouse gas emissions. Generally, the process for estimating annual greenhouse gas emissions is:

1. Gather fuel use data (diesel fuel, gasoline, natural gas, heating oil, etc.) for the most recent full calendar year
2. Apply emission factors to calculate carbon dioxide emissions
3. Report carbon dioxide emissions to your CCX account representative for consultation

Selected emission factors are in Appendix 3 of this document. Additional emission factors for greenhouse gas emissions from stationary and mobile combustion are available online, from the World Resources Institute/World Business Council for

Sustainable Development GHG Protocol. The calculation tools, which are Excel spreadsheet, are available online at www.ghgprotocol.org. CCX staff is available to answer any additional questions related to calculation of direct greenhouse gas emissions.

Membership Application

An entity wishing to join the Exchange as an Offset Aggregator must complete and submit a CCX membership application for Participant Membership. "Participant Member" is the category of CCX membership that includes Offset Aggregators, Offset Providers and Liquidity Providers. The membership application is reviewed separately from any Offset Project proposal or enrollment documents. A potential Offset Aggregator does not need to include information on potential projects with its membership application. The enrollment fee must be included with the membership application.

The membership application must be approved before an Offset Aggregator is assigned a CCX Registry Account. An Aggregator cannot register offset credits or access the electronic trading platform without an active Registry Account. The Application is contained in Appendix 2.

Fees

An entity wishing to join the Exchange as an Offset Aggregator must submit all relevant enrollment, annual and transaction fees. The Offset Aggregator one time enrollment fee is currently set at $5,000 (US), and must be sent to CCX along with the membership application. Upon application approval, the Aggregator will be billed for its first year of annual dues, along with any retroactive annual dues. Annual dues must be paid for any calendar year in which an Aggregator wishes to enroll vintage year Offsets, including past years. For example, an Aggregator that joins CCX in 2007 but wishes to enroll vintage 2005 and vintage 2006 offsets, in addition to 2007 and future-year offsets, must pay annual dues for 2005 and 2006. Annual dues for Offset Aggregators are currently set at $5,000 (US).

In addition to these fees, Offset Aggregators in North America will be subject to transaction fees comprised of offset registration fees of $0.15 (US) per metric ton of carbon dioxide equivalent enrolled and, upon sale of registered offsets, a trading fee of $0.05 (US) per "side" (i.e., "sell" or "buy" side of a trade). In other words, for every metric ton of carbon dioxide equivalent registered and sold, the Aggregator will pay $0.20 (US) in transaction fees.

All Exchange fees are subject to change.

Chapter 4: Designing the Aggregation Program

Introduction

It is the responsibility of each Offset Aggregator to design a strategy for project aggregation, enrollment, verification and eventual sale of Offsets that is in compliance with the rules and procedures of the Exchange. This strategy should be sustainable from year to year, and should take into consideration the type of sequestration project (e.g., conservation tillage or grassland plantings), ideal geographic scope, scale in terms of target tonnage enrolled and number of participants, project verifiability, and the administrative and oversight capabilities of the Aggregator. Initial offset pool program design should focus on completing the following basic tasks:

1. Select approved project type or types
2. Select initial geographic scope
3. Identify potential participants
4. Formulate guidelines pertaining to project owner sign-up, reporting, verification, revenue stream, etc.
5. Develop offset pool participant forms and tracking database
6. Present program to CCX Committee on Offsets

While the steps listed above are not necessarily linear, all of them should be completed before major investments are made in further marketing and project enrollment.

Select Project Type or Types

Chicago Climate Exchange Offset Aggregators may enroll in one or more approved project type. A list of approved project types can be found in Figure 4.1. For example, an Aggregator with an agricultural focus may wish to aggregate soil carbon sequestration from conservation tillage, sustainable rangeland management and grassland projects. A project pool, however, must be composed of only one project type, i.e., conservation tillage and sustainable rangeland management projects would make up two separate offset pools. Grasslands may be enrolled separately or within conservation tillage or rangeland pool.

In the initial set-up of the aggregation pool, it may be useful to consider steps one through three holistically. For example, you may find yourself changing the geographic scope of your pool after attempting to identify potential participants. Similarly, marketing to owners of soil carbon sequestration projects may uncover a latent demand for aggregation of agricultural methane projects.

Select Initial Geographic Scope

The Chicago Climate Exchange does not require Offset Aggregators to limit the geographic scope of their work, aside from the project-specific geographic crediting restrictions given in CCX rules. Soil carbon sequestration projects may be pooled from any region that is eligible for crediting. Keep in mind that the offset crediting rate per acre is region-specific.

If an Aggregator enrolls more than one project type, separate databases must be maintained for each of the project pool types.

Some Aggregators of soil carbon sequestration offsets have taken the approach of limiting initial project enrollment to a single state, then branching out as the opportunity presents itself. This strategy allows Aggregators to focus attention and resources on enrolling a few initial Project Owners, who can then serve as an example in future project marketing.

Table 4.1 Offset Project Types

- **Soil Carbon Sequestration**
  - **Conservation Tillage**
  - **Grassland Planting**
  - **Sustainable Rangeland Management**
- **Forestry**
  - **Avoided deforestation/Reforestation**
  - **Small Scale Managed Forests**
  - **Small Scale Unmanaged Forests**
- **Methane Destruction**
  - **Agricultural**
  - **Landfill**
  - **Coal Mine**
- **Destruction of Ozone Depleting Substances**

Identify Potential Participants

Before embarking on the design of aggregation program procedures and undertaking major marketing efforts, it is necessary to determine the feasibility of enrolling projects in the specified geographic range. It is possible that farmers using conservation tillage practices could be concentrated in a few neighboring counties or they may be spread across a state or region. It is important to understand the likely geographic distribution of eligible projects. While some areas may be inclined to experiment with conservation tillage and enroll their land in an aggregation pool, other areas may be characterized as less experimental. Knowing the difference will save time and other resources as you move into the marketing phase.

If you don't have access to a large group of eligible project owners lined up, it may be best to target your resources at enrolling a small number of larger projects initially, and then use the success of that initial pool as the jumping-off point for marketing to a larger audience. Registering and selling Offsets from several large projects will help you meet tonnage targets, and will serve as an example of successful participation for other landowners.

Enrolling the first project owners is arguably the most difficult part of an Aggregator's marketing task. Initial work should be focused on identifying the low-hanging fruit, for instance, project owners in the identified geographic area who occasionally practice conservation tillage and may be receptive to a commitment to long term continuous conservation tillage. For example, county or regional farmers' cooperatives, or other farm organizations, may have listings of farms that are currently in conservation tillage. Once a couple of candidate farm owners have been identified, they may be able to refer you to neighbors, relatives or professional acquaintances that have eligible projects.

Even though this initial outreach is being conducted as a feasibility study, it will be useful to have prepared a short description of the proposed offset aggregation pool and the Chicago Climate Exchange that can be delivered over the phone. You should also be prepared to send some basic informational materials at this point, although it does not need to be the complete marketing package you will later produce.

You may want to divide the database generally by state or county, specifically if the offset crediting rate will vary across the pool. This will allow for searches by location, which may be useful to the marketing component, and will also ensure that you don't accidentally over- or under-count expected Offset generation.

This feasibility study should leave you with enough prospects that you feel comfortable investing additional time and resources to market the aggregation pool in your target area. If you are not confident that the project owners with whom you spoke would enroll their projects if given the chance, or that there are sufficient additional prospects in the area, then local marketing efforts may have to be significant and/or the identified geographic scope may have to be enlarged.

Formulate Program Guidelines and Forms

The Offset Aggregator may formulate its own program guidelines for project owners, but the resulting project pool must be able to meet all CCX requirements for contract term, verification, tracking, etc. This means that recordkeeping has to be well organized and thorough. All pooled project owners should be aware of the contractual commitments associated with enrolling their land in a soil carbon sequestration pool. These commitments are:

1. Land must be kept in **continuous conservation tillage** for a minimum of five consecutive years.
2. Enrolled acreage must remain in the pool for a minimum of five consecutive years.
3. Project owners, at the Aggregator's discretion, may be responsible for replacing any Offsets that are cancelled in the case of non-performance.

Offset Aggregators are responsible for generating their own program participation forms. These forms must include the following information:

1. Description of project to be enrolled in project pool by Offset Provider
2. Signed testimony of Offset Provider's project ownership and transfer of the right to sell Offsets to Aggregator
3. Necessary project-specific supporting documents, including:
    a. USDA Farm Service Agency maps of enrolled land
    b. USDA Farm Service Agency crop certification summary (annual)

Any additions to these necessary elements are at the discretion of the Aggregator. The enrollment documents will be reviewed by the Verifier.

Develop Tracking Database

The Offset Aggregator must maintain a complete database of projects enrolled in the aggregation pool. The database must, at a minimum, include the following information:

1. Contract number
2. Date of issue of contract
3. Name of project owner
4. Address of project owner
    a. City
    b. County
    c. State
    d. Zip Code

5. Phone number
6. Number of enrolled acres by practice
    a. Conservation Tillage or
    b. Permanent Grassland Planting
7. Comments field

Present Aggregation Program to CCX Committee on Offsets

Up to this point in this manual, it has been is assumed that the projects being aggregated clearly meet Chicago Climate Exchange eligibility criteria for that project type. The criteria for soil carbon sequestration projects are given in Chapter 2 of this manual. Once the structure of the aggregation pool has been solidified, it must be presented to the CCX Committee on Offsets for approval.

According to CCX rules, the Committee on Offsets shall:

1. Review and vote on each proposed registration of a CCX Project, which initially can be:
    a. Exchange Methane Offset projects
    b. Exchange Soil Offset projects
    c. Exchange Emission Reduction projects;
2. Recommend additional mitigation Project types and locations for CCX eligibility and develop rules for such Projects;
3. Consider approved Clean Development Mechanism projects to earn Exchange Offsets;
4. Provide guidance on the Project registration process;
5. Provide oversight for the registration of Projects undertaken in locations that are not initially eligible for Exchange Offsets;
6. Monitor the diversity of registered Project types and propose methods for maintaining diversity as necessary;
7. Develop methods for apportioning the use of registered Exchange Offsets and Exchange Early Action Credits by individual CCX Members and Associate Members if the total quantity of these Carbon Financial Instrument contracts that Members and Associate members wish to use for Compliance exceeds the quantities established by the market constraints described in Chapter 4 of the *CCX Rulebook*; and
8. Evaluate violation of Offset Project rules and recommend a course of action to the Executive Committee.

Pooled projects are reviewed on the aggregate level. The Committee on Offsets assumes that every project in the pool meets the guidelines for participation outlined by the Aggregator, which in turn must meet CCX eligibility criteria for that project type. The Committee is checking to confirm that the Aggregator's guidelines for participation comply with CCX eligibility criteria, and that the Aggregator has established the appropriate procedures for enrollment and verification.

When the Committee on Offsets approves an offset project or an aggregation pool, the Committee is not necessarily guaranteeing that the project will receive CCX offsets. The Committee approves projects "pending verification," meaning that the Aggregators must have the project successfully verified before registration of offsets can occur. Committee review of basic projects that clearly meet the CCX eligibility criteria is done to identify any peculiarities that may arise during verification, so that such questions may be resolved before the project owner or Aggregator expends time and money on verification. Furthermore, if the Verifier finds that any of the projects in the aggregation pool do not meet the eligibility criteria or cannot be successfully verified, those projects cannot be awarded offsets. That said, CCX staff members will assist aggregators to ensure that only qualified and verifiable projects get reviewed by the Committee.

Drafting the Project Summary for Committee

The Offset Aggregator will need to submit a summary of the proposed Offset project pool to the CCX Committee on Offsets. This summary should be fairly brief (a few pages may be sufficient) but must include a description of the expected project pool's profile in detail sufficient to demonstrate compliance with the CCX eligibility criteria for soil carbon sequestration. In addition, the Aggregator should be able to demonstrate to the Committee that it is familiar with CCX rules and requirements governing Offset Aggregators, and will perform in a manner capable of meeting those requirements.

CCX staff are available for consultation in drafting the proposal for Committee. The proposal is presented to the Committee by CCX staff, not the Aggregator, so staff will need to be familiar enough with the aggregation program that they will be able to answer the Committee's questions regarding the proposal.

The soil carbon sequestration project eligibility criteria that should be addressed in the proposal to Committee include:

1. Project location(s) and corresponding offset issuance rate(s)
2. Initial acreage enrollment targets, and corresponding offset registration targets
3. Long-term acreage enrollment targets
4. Expected enrollment of individual projects in USDA, NRCS, state-level or other type of conservation program, if applicable
5. Susceptibility of proposed geographical locations to frequent catastrophic events that might lead to a significant loss of soil carbon stocks

In addition to providing information regarding expected adherence to the basic soil sequestration project eligibility criteria, an Aggregator should be able to demonstrate to the Committee on Offsets:

1. Technical ability to design and administer project pool on an annual basis
2. Initial consideration of project scope and scale
3. Initial consideration of organizational approach to aggregation administration
4. Eligibility for CCX membership as an Aggregator, i.e. demonstration of eligibility to be an Eligible Commercial Entity as defined in the CCX Membership Application contained in Appendix 2 of this manual.

Chapter 5: Recruit and Enroll Participants

Introduction

It is assumed that, by this point, the Aggregator has identified the general geographic region to be targeted for project pool enrollment. The task now is to identify individual farmers and landowners in that area as offset providers and to enroll them in the project pool. Prospective participants will need to be identified regardless of whether the Aggregator chooses to favor direct or indirect marketing strategies. This chapter will focus on identification of initial participants and provide further guidance in the following areas:

1. Identifying Prospective Participants
2. Outreach
    a. Development of Marketing Materials
    b. Website Design and Use
    c. Educational Workshops
    d. Word of Mouth
3. Formal Enrollment

Identify Prospective Participants

Identifying project owners can seem like a daunting task at the outset. Offset Aggregators' experience with enrolling multiple offset providers suggests that it may be wise to focus initial recruitment work on the "low-hanging fruit," that is to say, project owners who are familiar with the offset-generating activity. The best advertising is proof of project success, so these initial participants can be valuable assets in marketing not only your project pool, but also the offset-generating activity in general. Spread of continuous conservation tillage practices resulting from the opportunity to sell offsets would be a sure sign of project success.

Early adopters will serve as valuable examples to prospective participants in future rounds of enrollment. These initial enrollees may also be likely to know other farmers that would be eligible for inclusion in the project pool.

Initial participants may already be known to the Aggregator, or may need to be unearthed with a bit of research. Databases of lands enrolled in the USDA Conservation Reserve Program (CRP), as well as any database that may specify use of conservation tillage practices, are often good starting points for such research. The following are organizations that should either have access to such databases, to the extent that they are

public, or be able to refer Aggregators to other sources. Such organizations may even be able to refer an Aggregator to individual farmers:

- USDA Farm Service Agency (FSA), which administers the Conservation Reserve Program
- State Department of Agriculture
- State Department of Natural Resources
- State universities, particularly faculty and staff in agricultural and extension schools
- County FSA offices
- Other, local agricultural clubs, cooperatives and other organizations

When contacting these agencies, it would be useful to have a brief description of the purpose of the Aggregation pool available for distribution. This will give staff at the agencies a better understanding of your intentions in accessing the information, and they may even be willing to make marketing materials in their office and/or website.

Outreach

As with any marketing campaign, there are a number of strategies an Aggregator can use to approach, educate and enroll potential offset providers. Some of the marketing activities that have proven to be successful are listed below, with more detailed information provided on development of marketing materials; design and function of educational outreach; website design and purpose; and using word of mouth to promote the project pool.

- Engage in direct outreach: in-person, telephone, e-mail
- Hold educational outreach sessions
- Put up a website with background information on the offset Aggregation pool and enrollment information
- Advertise outreach in local and regional agricultural publications and commercial spaces, with contact information and website address.
- Seek out coverage in local and regional news outlets
- Maintain contact with state and regional FSA offices and other agricultural organizations

Marketing Materials

The Aggregator will need informational materials for distribution at educational outreach and other venues and to be posted on the website, if a website is utilized. Marketing materials need to convey basic information on the market for carbon dioxide sequestration offsets from conservation tillage etc.; the purpose of the aggregation pool; the role of the Aggregator; requirements of the pool participants; and expected financial returns of participation. CCX has already developed marketing materials that can be used to provide some of this information, but the Aggregator may find it beneficial to tailor additional marketing pieces to its specific audience.

Figure 5.1: Information to be Provided in Marketing Materials

- Description of the CCX soil carbon sequestration offset program, including definition of conservation tillage and project eligibility criteria
- Explanation of offset pricing and the market mechanism (i.e., sale of offsets via the CCX electronic trading platform)
- Description of enrollment process, including participation requirements
- Aggregator contact information

Website

While a web presence is not strictly necessary, experience has shown that the internet can be a powerful marketing tool for Aggregators. Having a website allows potential offset providers to access information on Aggregation pools in their region using online search engines, or via links from other websites. The CCX website provides links to Offset Aggregators' websites; without a website, an Aggregator could be missing out on reaching new Project Owners. A website may allow Aggregators to reach landowners who are not able to attend educational outreach, or those landowners who are more remote and therefore may not have occasion to see advertisements posted in regional commercial spaces or agricultural offices.

A website can also function as a resource for existing aggregation pool participants to access notices regarding verification, current offset prices, etc. By acting as a forum, the website can build community among landowners in the aggregation pool. Enrolled landowners can also refer neighbors, relatives and friends to the website if they are interested in becoming offset providers themselves. Aggregators may consider putting aggregation pool enrollment forms and other contracts online, to facilitate distribution and easy enrollment.

Educational Workshops

Enrolling farmers in an offset aggregation pool is usually more than just getting them to sign the participation contract on the dotted line. One of the Aggregator's tasks is to educate project owners on the link between conservation tillage practices and soil carbon sequestration, as well as the link between sequestration and the global carbon market. These lessons are best conveyed in an educational setting such as a conference session or stand-alone educational workshops.

Figure 5.2: Networking Resources

- USDA Farm Service Agency (FSA)
- State Department of Agriculture
- State Department of Natural Resources
- State universities, particularly faculty and staff in agricultural and extension schools
- County FSA offices
- Other, local agricultural clubs, cooperatives and other organizations

The networking resources listed in Figure 5.2 should be able to assist Aggregators in locating conferences expected to attract farmers engaged in conservation tillage and those exploring conservation tillage in the future. If the Aggregator chooses to hold its own educational workshops around the state, these organizational contacts may be willing to distribute notices to their contact lists, or even offer use of meeting space in regional offices. The landowners identified in the first step of the recruitment and enrollment process, identifying prospective participants, should be invited to all workshops, and workshop dates should be posted online and advertised using other means (paid print advertising, etc.) if deemed necessary.

Educational workshops should educate attendees on conservation tillage, the CCX market and offsets program, the role of the Aggregator and project enrollment by individual landowners. The general subject areas listed in Figure 5.1 should all be covered. Experience has shown that a PowerPoint presentation is a good format in which to present this information. The presenter should include pictures of the CCX Registry and electronic trading platform in the slide presentation; see chapters 7 and 8 of this manual for sample illustrations. Information on recent market activity, such as price and volume statistics and graphs, has also been found to pique project owners' interest. Market statistics are available on the CCX website, or contact your CCX Account Representative for prepared graphs.

The Aggregator should also have printed marketing materials available for attendees. In-person workshops are also excellent opportunities to distribute copies of the project enrollment contracts, and to explain the responsibilities of enrolled project owners to the Aggregator and aggregation pool.

Word of Mouth

Happy customers are always the best salespeople, so landowners already enrolled in the aggregation pool should be encouraged to promote the program. In addition, those farmers that engage in conservation tillage practices often know other conservation tillage farmers. The Aggregator should make additional marketing materials available to enrollees and otherwise facilitate information sharing.

Formal Enrollment

The ultimate goal of all outreach efforts is clearly to enroll eligible cropland in the soil carbon sequestration aggregation pool. Project owners must complete the project registration forms described in chapter 4 of this manual. Experience has demonstrated that recruitment is most efficient when there is a formal enrollment deadline. The Exchange does not impose any penalties on enrollment of several smaller project pools as opposed to one or two larger pools. Therefore, having enrollment deadlines early and often may help spur enrollment, particularly at the outset of the recruitment process. All enrollment documentation should be filed in a place that is easily accessible, for use during the verification process.

Figure 5.3: Project Owner Responsibilities

- Participation is a legally binding commitment
- Land must be in conservation tillage for a minimum of five consecutive years
- Must allow verifiers access to land and equipment and cropping records as needed
- Project owners, at Aggregator's discretion, may be responsible for replacing Offsets cancelled in the case of non-performance

Initial enrollment is the best time to open up clear lines of communication between the Aggregator and individual project owners. Clear lines of communication will be important down the road, particularly during the verification process and if any problems arise. It is important to fully explain the responsibilities of project participation to the enrollees. Figure 5.3 summarizes the duties that project owners have to the Aggregator and, in effect, the Chicago Climate Exchange.

Chapter 6: Verification

Introduction

Verification is the procedure through which the physical occurrence of soil carbon sequestration claimed by an Offset Provider or Aggregator is confirmed by a third party through application of CCX protocol and direct, in-field adherence to specified eligible practices. An enrolled offset project must be verified, and the verification report must be approved before the project is issued CCX Carbon Financial Instrument contracts. Verification must take place annually for each contract pool. This chapter shall provide further information on:

1. CCX-approved Verifiers
2. The verification process for soil carbon sequestration
3. The verification report and CCX review of the report

CCX-Approved Verifiers

Verification must be conducted by a CCX-approved verifier. These verifiers have demonstrated to CCX their technical expertise in performing verification services for specific CCX Offset project types as well as the absence of any project-related conflicts of interest. Before performing any verification work, the verifier will also be required to submit project-specific statements of conflicts of interest. The eligibility criteria for entities interested in becoming a CCX-approved Verifier are:

- Applicants shall have been in existence for at least four years and shall be in good standing under the laws of its jurisdiction of organization.
- Applicants shall have at least two years experience in greenhouse gas measurement, monitoring, verification or related activities.
- There shall not be any pending judicial process for malpractice, fraud and/or other activity incompatible with your functions as a CCX-Approved Verifier.
- Your organization shall have net worth of at least $1 million and carry **professional liability** (a.k.a. errors and omissions insurance) insurance coverage of at least $2 million applicable to your work as a CCX-Approved Verifier, including the valuation of any offset project and resulting issuance of Carbon Financial Instruments.
- All verification reports are subject to audit by the NASD. All CCX-Approved Verifiers must provide full cooperation to the NASD in its exercise of this audit function.

A listing of existing verifiers, including contact information, is available in the Offsets section of the CCX website (www.chicagoclimateexchange.com). The general and project-specific Verifier statements of conflicts of interest and application form are in Appendices 6.1 and 6.2 of this manual, respectively.

Verification of Soil Carbon Sequestration Projects

Conservation Tillage and Grassland Planting

Verification of soil carbon sequestration reports is based on a desk audit and in-field inspection of a random sample of enrolled lands. The random sample chosen for sampling (a minimum of 10% of enrolled acreage and 10% of participants) is selected from each of an Aggregator's contract pools. An Aggregator that enrolls lands on a rolling basis will have more than one contract pool, e.g. a January pool made up of all lands aggregated in the six month leading up to January 1, and a July pool made up of all lands aggregated in the six months between January and July.

The Offset Aggregator does not need to be on site for field verification. An Aggregator's most critical role in verification is to supply project information, e.g. individual enrolled field information, to the verifier and to act as the liaison between the verifier and the individual project owners/farmers if their land is chosen for sampling. In this regard, verification will to some degree be a test of the Aggregator's tracking database and the accuracy of information conveyed to the Aggregator by the individual project owners.

The verifier will be checking to ensure that actual activity is as reported by the Aggregator's project description. For example, if an Aggregator claims to have earned 50,000 metric tons' worth of CO_2 offset credit from 100,000 acres of enrolled land divided among 200 individual project owners, the verifier will check first to see that the enrolled lands total what is reported, and second, with sampling, that all of the enrolled acreage is indeed in conservation tillage and verifies acreage for accuracy. The Aggregator is ultimately responsible for the project pool's adherence to what was initially reported for offset issuance.

At minimum, desk audit will include:

1. Review of sales contracts on file with Aggregator
2. Review of paperwork confirming farm equipment type and/or seed purchases, if applicable

At minimum, field verification will include:

1. Confirmation of contracted acreage. Estimated acreage must be within two percent of the contracted claim.

2. Confirmation of vegetative condition. Crop type will be confirmed (important in assessing tillage practice verification).
3. Assess evidence of field tillage practices, including:
    a. Indications of soil disturbance, including "clean" or bare soil, broken soil surface, ridges, and/or furrows
    b. Presence of surface vegetation litter from previous seasons/years
    c. Soil condition
4. GPS readings for field locations – for confirmation of reported locations and for use in soil sampling.
5. Digital photographing of conditions on selected fields.
6. Maintenance of a record of all field observations and measurement with comparison to data recorded in contracts to ensure consistency.

Generally, the inspection shall examine field conditions, documentation of project start dates (when applicable) and other records as may be specified by CCX.

In the case of noncompliance with the terms and conditions for CCX soil offsets, the owner of the noncompliant Project shall transfer to the Soil Carbon Reserve Pool a quantity of CCX CFI contract that is equal to the total quantity of soil Offset CFI contract that have been issued to the Project during the program years.

Verification of Rangeland Soil Carbon Sequestration Projects

Certain rangelands managed to enhance carbon storage in the soil are eligible for inclusion in the CCX Rangeland Soil Carbon Management Offsets program provided each of the following conditions are met (1-4):

1. The project takes place on rangeland, which is defined by the NRCS as:

"Land on which the historic plant community is principally native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing. In most cases, range supports native vegetation that is extensively managed through the control of livestock rather than by agronomy practices, such as fertilization, mowing, or irrigation. Rangeland also includes areas that have been seeded to introduced species (e.g., clover or crested wheatgrass) but are managed with the same methods as native range8."

8 In many cases, Rangeland refers to areas in the Western part of the U.S., while the general term "Grazing Lands" is used in regions East of the Mississippi. The use of the term Rangeland in this protocol is a land use designation and not a geographic designation. Land that fits the above definition of Rangeland *may* be eligible for CCX Rangeland Soil Offsets whether it is nominally referred to as Rangeland or Grazing Land provided that appropriate crediting rates can be established.

2. The project is in a geographic area for which data on soil sequestration rates for rangeland are available to CCX. Figure 9.x maps these areas.

3. Project involves rangeland management practices that include use of ***all*** of the following tools:
    a. Light or Moderate Stocking rates;
    b. Sustainable Livestock Distribution which includes:
        i. Rotational grazing
        ii. Seasonal use.

The Natural Resources Conservation Service (NRCS) Field Office Technical Guides publish guidelines for managing the controlled harvest of vegetation with grazing animals. Stocking rates and livestock distribution criteria are defined according to County and State in the NRCS "Prescribed Grazing Specification" code.

In most regions Rangeland that can be classified as degraded prior to inception of the project is eligible for different crediting rates. Degraded rangeland indicators specific to soil carbon storage are listed below and include soil surface loss or degradation and heavy stocking rates (exceeding carrying capacity of project land).

4. The project owner can demonstrate that its rangeland holdings outside of the Project are sustainably managed.

Documentation of Rangeland Management Practices

Conformance with the above eligibility requirements may be documented using the following methods (to be confirmed via site visit by CCX-approved verifier):

- Photographs of project site (e.g. aerial, remote sensing)
- Ranch records of stocking rates and grazing rotation patterns
- Records from agricultural extension agents or other agencies performing a monitoring function.

NRCS indicators of degraded rangeland related to below-ground carbon storage

The U.S. Natural Resources Conservation Service (NRCS) has established indicators of degraded rangeland that are published in "*Interpreting Indicators of Rangeland Health*" (U.S. Natural Resources Conservation Service, 2005). Eligibility to earn CCX Rangeland Soil Carbon Management Offsets based on restoration of degraded rangeland requires that the included rangelands must fall under the NRCS designation "Extreme" or "Moderate to Extreme" for indicators 1 and 2, and "Slight to Moderate, Moderate, Moderate to Extreme or Extreme" for indicator 3 to qualify as degraded. The applicable

indicators are summarized below. A project site may qualify as degraded if any of the following indicators are present.

Indicator: Bare Ground

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)	
	Extreme	**Moderate to Extreme**
Bare Ground	**Much higher than expected for the site. Bare areas are large and generally connected.**	**Moderate to much higher than expected for the site. Bare areas are large and occasionally connected.**

Indicator: Soil Surface Loss or Degradation

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)	
	Extreme	**Moderate to Extreme**
Soil Surface Loss or Degradation	**Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.**	**Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure and subsurface layers.**

Indicator: Annual Production

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)			
	Extreme	**Moderate to Extreme**	**Moderate**	**Slight to Moderate**
Annual Production	**Less than 20% of potential production for the site based on recent weather.**	**20-40% of potential production for the site based on recent weather.**	**40-60% of potential production for the site based on recent weather.**	**60-80% of potential production for the site based on recent weather.**

The Verification Report and Review

The verification report, which is to be produced by the Verifier, summarizes the proposed Offset project's adherence to the protocol laid out in the CCX rules given in Chapter 2 of this manual. Generally, the report should describe how the Verifier conducted the project review and the results of that review, with an eye to clearly and concisely explaining how the verification procedures listed in the above section of this manual were executed in the field. The report must include:

- Description of expertise and training of staff involved in verification
- Description of sampling procedure and results
- Description of Verifier's execution of methodology for both desk and in-field verification
- Verification results, including recommendation of Offset crediting in metric tons carbon dioxide equivalent

Once completed, the verification report is submitted to CCX for staff review. If all items on the Verifier Checklist are present and the report is otherwise complete, the report is sent to NASD, the CCX Provider of Regulatory Services, for a second round of checks. NASD shall audit soil sequestration verification reports to assure completeness, accuracy and conformance to the CCX-specified inspection protocols. If the report is deemed to be complete and requires no additional review of verification methodology by the CCX Committee on Offsets, the quantity of Offsets listed in the report will be registered to the Aggregator's CCX Registry account in the appropriate vintage(s). If CCX staff, NASD or the CCX Committee on Offsets requires any additional information from the Verifier, CCX staff will contact the Verifier with such a request.

Chapter 7: Register Offsets on CCX

Introduction

Once project verification has been completed, CCX Carbon Financial Instruments (CFI) contracts are registered in the Aggregator's CCX Registry account in an amount equal to the Offset crediting stipulated in the verification report. At this point the CFI contracts generated by the Offset project are able to be sold on the CCX trading platform. The Offset Aggregator is free to sell the CFI contracts soon after enrollment, or hold the CFI contracts– known as "banking" – for later sale. Chapter 8 will discuss Exchange-based trading and clearing. Chapter 7 provides information on the Offset registration process and the CCX Registry

1. CCX Registry
2. Registering Offsets
3. Public Announcement of Offsets Registration

CCX Registry

The CCX Registry is an electronic database that serves as the official holder of record and transfer mechanism for CCX Allowances and CCX Offsets. Each CCX Member has a Registry account. The Registry is linked to the electronic trading platform, so that all trading activity is recorded and cleared through the Registry.

1 CFI contract = 100 metric tons CO_2e

Each CCX Registry Account Holder will be assigned an account in the Registry, and may establish additional accounts and/or sub-accounts as may be needed to facilitate management of Carbon Financial Instruments (CFI) contracts. Information contained in each Registry account is accessible only to traders and account managers authorized by the Registry Account Holder. The Exchange publicly reports aggregate information on transfers across Registry account, i.e. periodic trading volume reports, but does not publicly report the Registry activity of any single Registry Account Holder.

An Aggregator may wish to establish sub-accounts for holding CFI contracts generated by project pools of different offset project types, such as conservation tillage and agricultural methane, but it is not necessary.

Any offsets awarded to an Offset Aggregator are listed in the Registry account by CFI contract Vintage. Offsets held in any Registry account will be identified by geography, project type and project number. For example, CFI contracts generated by a hypothetical soil sequestration project in Kansas would be listed as "Kansas Agricultural Soil #121" where Kansas refers to the state of origin of the sequestration, agricultural soil refers to the practice generating the offset and 121 is the unique lot identification

assigned by CCX. Any offset holdings in any Registry account – that of an Offset Aggregator or any other member – will include these basic identifying details along with the quantity of CFI contract of that project held. Therefore, a Member that purchases CFI contract on the electronic trading platform may, upon completion of the clearing process, find that he or she has purchased CFI contracts generated by a soil sequestration project in Kansas, as opposed to any other offset type or an allowance generated by an emission reduction.

Figure 7.1 is the Registry Holdings page of a hypothetical Offset Aggregator. Note that the Registry Holdings page tracks offset issuance, net trading activity and current offset holdings. For example, this Offset Aggregator was issued 100 Vintage 2004 CFI contracts (10,000 metric tons carbon dioxide equivalent); sold 85 CFI contracts; and current holds 15 Vintage 2004 CFI contracts – 13 associated with a soil project in Texas, two with a soil project in Illinois. More detailed transaction history is available elsewhere in the member's Registry account.

Figure 7.1 – Sample CCX Registry Holdings Page

CCX Chicago Climate Exchange

Chicago Climate Exchange Holdings Statement
Organization: CCX Offset Aggregator
as of **Wed, Nov 21, 2006**

Vintage:	2003	2004	2005	2006	2007	2008	2009	2010
Current holdings of Exchange Allowances	0	0	0	0	0	0	0	0
Current holdings of Exchange Offsets	0	15	112	21	0	0	0	0
Total current holdigns of CFIs	0	15	112	21	0	0	0	0

Exchange Allowances (Detailed)

Vintage:	2003	2004	2005	2006	2007	2008	2009	2010
Net Delivered Exchange Allowances from trades via CCX Trading Platform	0	0	0	0	0	0	0	0
Current holdings of Exchange Allowances	0	0	0	0	0	0	0	0

Exchange Offsets (detailed)

Vintage:	2003	2004	2005	2006	2007	2008	2009	2010
Exchange Offsets Issued	0	100	250	600	0	0	0	0
Net Exchange Offsets bought or sold via the CCX Trading Platform	0	-85	-138	-579	0	0	0	0
Exchange Offsets Intra-Company Transfer	0	0	0	0	0	0	0	0
Exchange Offsets issued or cancelled from Cash Transactions	0	0	0	0	0	0	0	0
Current holdings	0	15	112	21	0	0	0	0

Exchange offset holdings by project

Vintage:	2003	2004	2005	2006	2007	2008	2009	2010
Texas Agricultural Soil #43	0	13	41	0	0	0	0	0
Illinois Agricultural Soil #36	0	2	16	9	0	0	0	0
Kansas Agricultural Soil #121	0	0	55	12	0	0	0	0

Exchange Early Action Credits

Vintage:	2003	2004	2005	2006	2007	2008	2009	2010
Current holdings	0	0	0	0	0	0	0	0

Registering Offsets

The verification report is the official recommendation to CCX of the number of Offsets-based Carbon Financial Instrument contracts that should be credited to each Offset Aggregator or Offset Provider. Thus, Offsets are registered once CCX staff and NASD review the verification report and accept its findings. Verification reports are typically

reviewed within two weeks of receipt at the CCX office, and, provided verification is complete, Offset registration takes place immediately after review. The Offset Aggregator's CCX Account representative will notify the Aggregator of registration.

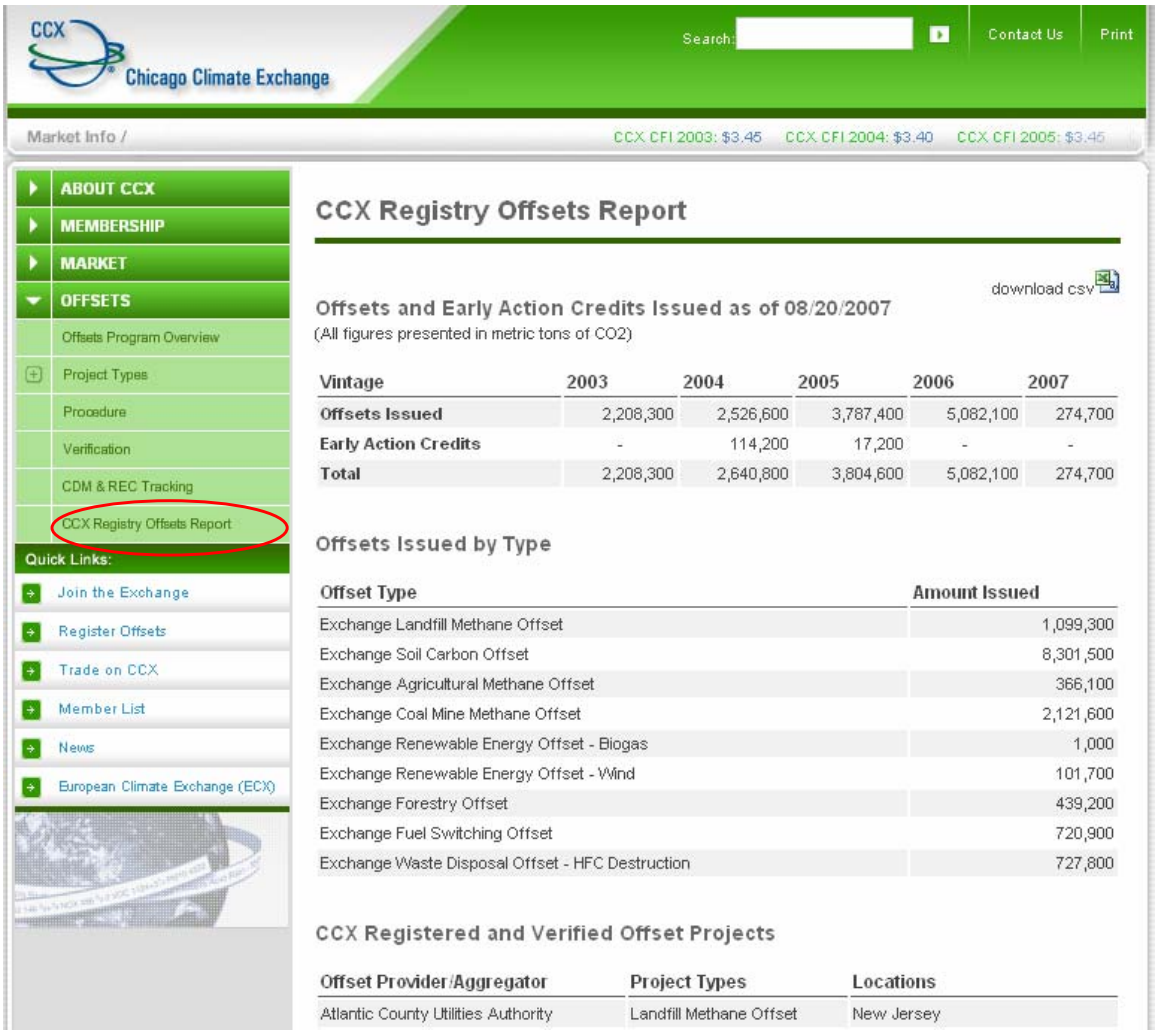
The CCX Offset Registration fee, currently set at $0.15/metric ton CO_2, is charged upon registration and the total amount due is posted to the Aggregator's Registry account. The Aggregator will also receive an e-mail from CCX Member Services alerting the Aggregator to obtain the fee statement via the Registry. Payment of registration fee is due the following business day. An Aggregator may net any administration fees, including the Offset registration fee, against platform trading proceeds. In other words, rather than wiring payment to CCX, an Aggregator may sell CFI contracts on the CCX trading platform and direct proceeds to CCX in order to cover any fees owed to the Exchange.

Public Announcement of Offsets Registration

Registration of Offsets is considered to be a matter of market information, and general information regarding newly registered projects is therefore made public on a periodic basis. CCX posts to its website the following information:

- Aggregate quantity of Offsets registered in each vintage year
- Offset Aggregator/Provider's name, along with registered project type and general location (e.g., country or state)

Breakdown of total Offset registration by project type (e.g. soil sequestration, landfill methane destruction, etc.) may be used in CCX presentations or other publications at the discretion of the Exchange. CCX does not report the quantity of Offsets associated with individual projects or individual Offset Aggregators or Offset Providers. Any Offset Aggregator or Offset Provider is free to publish more detailed information on project registration if so desired.


CCX
Chicago Climate Exchange
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Market Info /
CCX CFI 2003: $3.45
CCX CFI 2004: $3.40
CCX CFI 2005: $3.45
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MEMBERSHIP
MARKET
OFFSETS
Offsets Program Overview
Project Types
Procedure
Verification
CDM & REC Tracking
CCX Registry Offsets Report
Quick Links:
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Register Offsets
Trade on CCX
Member List
News
European Climate Exchange (ECX)
CCX Registry Offsets Report
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Offsets and Early Action Credits Issued as of 08/20/2007
(All figures presented in metric tons of CO2)
Vintage 2003 2004 2005 2006 2007
Offsets Issued 2,208,300 2,526,600 3,787,400 5,082,100 274,700
Early Action Credits - 114,200 17,200 - -
Total 2,208,300 2,640,800 3,804,600 5,082,100 274,700
Offsets Issued by Type
Offset Type Amount Issued
Exchange Landfill Methane Offset 1,099,300
Exchange Soil Carbon Offset 8,301,500
Exchange Agricultural Methane Offset 366,100
Exchange Coal Mine Methane Offset 2,121,600
Exchange Renewable Energy Offset - Biogas 1,000
Exchange Renewable Energy Offset - Wind 101,700
Exchange Forestry Offset 439,200
Exchange Fuel Switching Offset 720,900
Exchange Waste Disposal Offset - HFC Destruction 727,800
CCX Registered and Verified Offset Projects
Offset Provider/Aggregator Project Types Locations
Atlantic County Utilities Authority Landfill Methane Offset New Jersey

Chapter 8: Trading and Clearing

Introduction

All Chicago Climate Exchange Registry Account Holders that qualify as an Eligible Commercial Entity may access the CCX electronic trading platform to buy and sell Carbon Financial Instrument (CFI) contracts freely. All CCX trading activity is posted to the electronic platform, which is accessed online via the CCX website (www.chicagoclimateexchange.com). The trading platform is linked to the Registry, so trading activity is settled to each Account Holder's Registry account within 24 hours of trading activity. This chapter will provide an introduction to use of the trading and clearing systems, under the following subheadings:

1. Accessing the Trading Platform
2. Trading
3. Clearing
4. Revenue Distribution

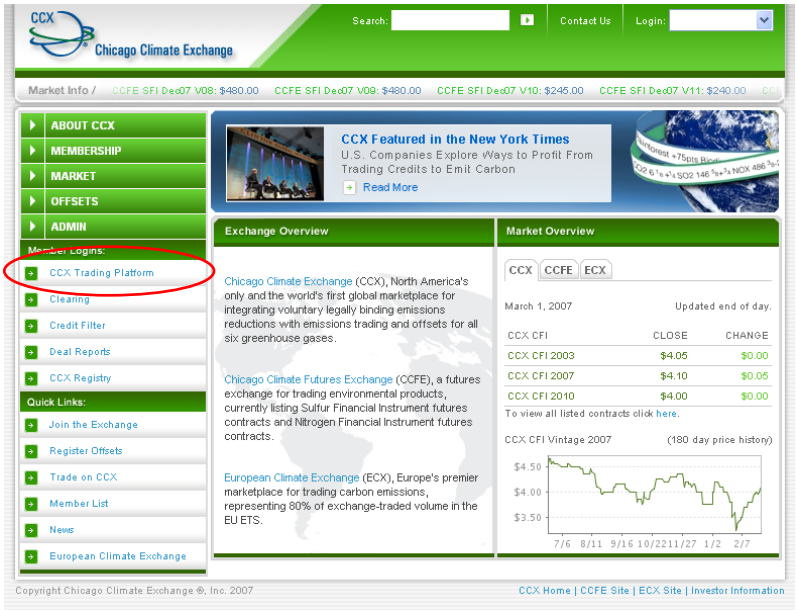
Accessing the Trading Platform

Appendix 8.1 lists system requirements for running the CCX trading platform.

In order to access and trade on the CCX trading platform, one must first be granted trading privileges as an Authorized User of the web-based CCX systems. Such access must be granted by the Offset Aggregator's User Administrator, the person who has been given the authority to grant or revoke user access to the CCX trading platform and/or the CCX Registry. Each Offset Aggregator must designate at least one User Administrator. Access can be granted on the membership application, at the time of the Aggregator's initial application for CCX membership, or adjusted at any point in the future by submitting a completed Authorized Use Form to the CCX Compliance Department.

Due to the Exchange's regulatory status, an entity wishing to trade actively – buy and sell – on the Trading Platform must qualify as an Eligible Commercial Entity ("ECE") as defined in the United States Commodity Exchange Act. A questionnaire to determine ECE qualification status is contained in Appendix 2. The CFI contracts generated from the Offset project(s) must be verified and registered before the Offset Provider or Aggregator is granted access to the Trading Platform.

Figure 8.1: CCX Trading Platform Access



The CCX Trading Platform can be accessed from the main page of the CCX website:

www.chicagoclimateexchange.com

Simply click on "CCX Trading Platform" on the left-hand side of the page, as shown in Figure 8.1. Users will be prompted to enter their user name and password in order for the Exchange to load.

Trading

The vast majority of CFI contract trading takes place on the trading platform; only "cash trades," which are undertaken by those Registry Account Holders that do not have access to the trading platform, take place off of the electronic exchange. The trading platform has been designed to be used by both professional and first-time traders, with an eye to being as user friendly as possible.

CCX staff are available to demonstrate the features of the trading platform to new users. Contact your CCX Account Representative to schedule a demo of the CCX system. This demo will cover the basics of trading, including:

- Logging onto the trading platform
- Entering orders
- Executing orders
- Tracking trading activity throughout the day
- Personalizing platform settings

New users will have the opportunity to practice entering and executing orders on a demonstration platform, which is functionally identical to the live trading platform, during the demonstration session.

The CCX trading platform is a "double-blind" system, meaning that neither the buyer nor the seller knows the identity of the other party. Figure 8.2 is a picture of the trading screen. It should be noted that all CFI contracts are treated generically on the trading screen: there is nothing to separate a CFI contract generated by an Offset from an

Allowance generated by a reduction in direct greenhouse gas emissions by a CCX Member. CFI contracts generated from an Offset project are serialized as such, and so when a buyer is delivered a CFI generated by an offset project, they are listed in the "Exchange Offset Holdings" section of the Registry Holdings Page (see Figure 7.1). The buyer's Registry account will also display the Offset project type (soil carbon sequestration, agricultural methane destruction, etc.) and location.

Some market participants are interested in purchasing offsets of a particular type or generated in a specific region. For example, a member may wish to purchase "local" offsets for annual True-up compliance, for public relations or other purposes. Origin and type of Offset can be tracked in the Registry. In order to achieve this, the Member and the Offset Provider typically arrange for a bilateral trade.

The CCX trading platform hours are 8:00 a.m. to 2:00 p.m. Central Standard Time, Monday through Friday. Exchange holidays are posted to the CCX website and distributed to members on a periodic basis.

Clearing

"Clearing" refers to the delivery of Carbon Financial Instrument contracts into and out of CCX market participants' Registry accounts and the corresponding exchange of funds. The CCX Clearing system allows for next-day delivery of CFI contracts and next-day transfer of payment from buyer to seller. The Exchange acts as the intermediary in all Exchange-cleared transactions, which serves to remove counterparty risk from trades. As with the trading platform, the identity of each party to a trade remains anonymous during the Clearing process.

Each party to a trade will receive a general e-mail by the close of business on the day the trade occurred advising the trader or another account representative to access the CCX Registry to review details of delivery, including payment instructions. Each party should access the Registry and comply with the instructions given, if necessary.

CFI Contract Delivery

When a trade occurs, CCX moves CFI contracts from the seller's Registry account to the buyer's Registry account in an amount equal to the quantity of CFI contracts traded during a given trading day. Delivery of CFI contracts takes place by the close of business on the day following the trade.

Generally speaking, the CFI contracts delivered to the buyer will be of the same vintage year the buyer purchased on the trading platform. For example, if a buyer purchased 100 2005 Vintage CFI contracts on the trading platform, he/she will be delivered 100 2005 Vintage CFI contracts from the seller's Registry account. If, however, the seller does not have 2005 Vintage CFI contracts in his/her Registry account, an earlier-year vintage CFI will be delivered. Earlier-year vintages CFI contracts are seen as fully fungible with later-year vintage CFI contracts. For example, if an Offset Aggregator sells 100 2005 vintage CFI contracts but has only 2003 and 2004 vintage CFI contracts in its Registry

account, 100 CFI contracts will be delivered from the closest vintage year; in this case, 100 2004 vintage CFI contracts would be delivered to the buyer. If the seller would like to deliver a different vintage, he/she must notify the Exchange in writing before the close of trading on the day the trade took place. For example, using the hypothetical scenario already discussed, the seller could notify the Exchange to deliver 2003 vintage CFI contracts instead of the 2004 vintage.

Payment Delivery

When a trade occurs, CCX wires the revenue from sales, minus the Exchange transaction fees, to the bank account specified on the seller's membership application by the close of business the following day. For example, if an offset Aggregator sells 10 CFI contracts (1,000 metric tons CO_2) at $4.00/metric ton, CCX wires the Aggregator $3,950: $4,000 in sales revenue minus $50 in transaction fees (assuming the $0.05/metric ton Exchange-cleared trade transaction fee). On the other side of the trade, the buyer must wire the cost of the CFI contracts purchased, plus Exchange transaction fees, to the Exchange by the close of business the following day. In this case, the buyer would be expected to wire the Exchange $4,050: $4,000 as payment for CFI contracts purchased and $50 in transaction fees.

In the event of failure by the buyer to transfer appropriate funds to the Exchange, CCX may initiate collection procedures in accordance with the provisions contained in the CCX Rulebook and related documents. The seller would not be affected by the buyer's failure to transfer appropriate funds to the Exchange.

Revenue Distribution

Distribution of revenue from an Offset Aggregator's sale of CFI contracts to individual enrolled project owners enrolled is completely at the discretion of the Aggregator. An Aggregator may distribute revenue back to project participants in quantities consistent with each participant's share of Offsets generated, perhaps keeping a percentage of revenue for project administration costs. Alternatively, the Aggregator may keep all revenue from CFI contract sales because landowners were compensated for project enrollment at the outset. Whatever the revenue distribution plan, it should be consistent with what was outlined in the program guidelines explained in Chapter 4 of this document.

Appendices

Appendix 1 Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Entire State	Arkansas	Florida
Alabama	Arkansas	Baker
Delaware	Ashley	Bay
Georgia	Bradley	Bradford
Illinois	Calhoun	Calhoun
Indiana	Chicot	Clay
Iowa	Clark	Columbia
Kentucky	Clay	Dixie
Maryland	Cleveland	Duval
Mississippi	Columbia	Escambia
North Carolina	Craighead	Franklin
South Carolina	Crittenden	Gadsden
Tennessee	Cross	Gilchrist
Virginia	Dallas	Gulf
West Virginia	Desha	Hamilton
	Drew	Holmes
	Grant	Jackson
	Greene	Jefferson
	Hempstead	Lafayette
	Howard	Leon
	Jackson	Levy
	Jefferson	Liberty
	Lafayette	Madison
	Lawrence	Nassau
	Lee	Okaloosa
	Lincoln	Santa Rosa
	Little River	Suwannee
	Lonoke	Taylor
	Miller	Union
	Mississippi	Wakulla
	Monroe	Walton
	Nevada	Washington
	Ouachita	
	Phillips	
	Poinsett	
	Prairie	

	Pulaski Sevier St. Francis Union Woodruff	

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Kansas	Kansas	Louisiana
Allen	Riley	Ascension
Anderson	Saline	Assumption
Atchison	Sedgwick	Avoyelles
Bourbon	Shawnee	Beauregard
Brown	Wabaunsee	Bienville
Butler	Washington	Bossier
Chase	Wilson	Caddo
Chautauqua	Woodson	Caldwell
Cherokee	Wyandotte	Catahoula
Clay		Claiborne
Cloud		Concordia
Coffey		De Soto
Cowley		East Baton Rouge
Crawford		East Carroll
Dickinson		East Feliciana
Doniphan		Franklin
Douglas		Grant
Elk		Iberia
Ellsworth		Iberville
Franklin		Jackson
Geary		Jefferson
Greenwood		La Salle
Harvey		Lafayette
Jackson		Lincoln
Jefferson		Livingston
Johnson		Madison
Labette		Morehouse
Leavenworth		Natchitoches
Lincoln		Orleans
Linn		Ouachita
Lyon		Pointe Coupee
Marion		Rapides
Marshall		Red River
McPherson		Richland
Miami		Sabine
Montgomery		St. Charles
Morris		St. Helena
Nemaha		St. James
Neosho		St. John the Baptist
Osage		St. Landry
Ottawa		St. Martin
Pottawatomie		St. Mary
Republic		St. Tammany
Rice		Tangipahoa

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Louisiana	Michigan	Minnesota
Tensas	Allegan	Big Stone
Union	Barry	Blue Earth
Vernon	Bay	Brown
Washington	Benzie	Carver
Webster	Berrien	Chippewa
West Baton Rouge	Branch	Cottonwood
West Carroll	Calhoun	Dakota
West Feliciana	Cass	Dodge
Winn	Clinton	Douglas
	Eaton	Faribault
	Genesee	Fillmore
	Gratiot	Freeborn
	Hillsdale	Goodhue
	Huron	Grant
	Ingham	Hennepin
	Ionia	Houston
	Isabella	Jackson
	Jackson	Kandiyohi
	Kalamazoo	Lac qui Parle
	Kent	Le Sueur
	Lapeer	Lincoln
	Lenawee	Lyon
	Livingston	Martin
	Macomb	McLeod
	Manistee	Meeker
	Mason	Mower
	Mecosta	Murray
	Midland	Nicollet
	Monroe	Nobles
	Montcalm	Olmsted
	Muskegon	Pipestone
	Newaygo	Pope
	Oakland	Redwood
	Oceana	Renville
	Ottawa	Rice
	Saginaw	Rock
	Sanilac	Scott
	Shiawassee	Sibley
	St. Clair	Steele
	St. Joseph	Stevens
	Tuscola	Swift
	Van Buren	Wabasha
	Washtenaw	Waseca
	Wayne	Watonwan
		Winona
		Wright
		Yellow Medicine

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Missouri	Missouri	Nebraska
Adair	Monroe	Adams
Andrew	Montgomery	Antelope
Atchison	New Madrid	Boone
Audrain	Nodaway	Buffalo
Barton	Osage	Burt
Bates	Pemiscot	Butler
Boone	Perry	Cass
Buchanan	Pettis	Cedar
Butler	Pike	Clay
Caldwell	Platte	Colfax
Callaway	Putnam	Cuming
Cape Girardeau	Ralls	Custer
Carroll	Randolph	Dakota
Cass	Ray	Dawson
Chariton	Saline	Dixon
Clark	Schuyler	Dodge
Clay	Scotland	Douglas
Clinton	Scott	Fillmore
Cole	Shelby	Gage
Cooper	St. Charles	Greeley
Daviess	St. Louis	Hall
DeKalb	Stoddard	Hamilton
Dunklin	Sullivan	Howard
Gasconade	Vernon	Jefferson
Gentry	Warren	Johnson
Grundy	Worth	Kearney
Harrison		Lancaster
Henry		Madison
Holt		Merrick
Howard		Nance
Jackson		Nemaha
Jasper		Nuckolls
Johnson		Otoe
Knox		Pawnee
Lafayette		Phelps
Lewis		Pierce
Lincoln		Platte
Linn		Polk
Livingston		Richardson
Macon		Saline
Marion		Sarpy
Mercer		Saunders
Mississippi		Seward
Moniteau		Sherman

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Nebraska	New Jersey	Ohio
Stanton	Atlantic	Adams
Thayer	Burlington	Allen
Thurston	Camden	Ashland
Valley	Cape May	Athens
Washington	Cumberland	Auglaize
Wayne	Gloucester	Belmont
York	Hunterdon	Brown
	Mercer	Butler
	Middlesex	Carroll
	Monmouth	Champaign
	Morris	Clark
	Ocean	Clermont
	Salem	Clinton
	Somerset	Coshocton
		Crawford
		Darke
		Defiance
		Delaware
		Erie
		Fairfield
		Fayette
		Franklin
		Fulton
		Gallia
		Greene
		Guernsey
		Hamilton
		Hancock
		Hardin
		Harrison
		Henry
		Highland
		Hocking
		Holmes
		Huron
		Jackson
		Jefferson
		Knox
		Lawrence
		Licking
		Logan
		Lucas
		Madison
		Marion

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Ohio	Oklahoma	Pennsylvania
Meigs	Bryan	Adams
Mercer	Choctaw	Allegheny
Miami	Craig	Armstrong
Monroe	Mayes	Beaver
Montgomery	Muskogee	Bedford
Morgan	Nowata	Berks
Morrow	Okfuskee	Blair
Muskingum	Okmulgee	Bucks
Noble	Osage	Butler
Ottawa	Ottawa	Cambria
Paulding	Rogers	Cameron
Perry	Tulsa	Carbon
Pickaway	Wagoner	Centre
Pike	Washington	Chester
Preble		Clarion
Putnam		Clearfield
Richland		Clinton
Ross		Columbia
Sandusky		Cumberland
Scioto		Dauphin
Seneca		Delaware
Shelby		Elk
Tuscarawas		Fayette
Union		Forest
Van Wert		Franklin
Vinton		Fulton
Warren		Greene
Washington		Huntingdon
Williams		Indiana
Wood		Jefferson
Wyandot		Juniata
		Lancaster
		Lebanon
		Lehigh
		Lycoming
		McKean
		Mifflin
		Montgomery
		Montour
		Northampton
		Northumberland
		Perry
		Philadelphia
		Potter

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Pennsylvania	South Dakota	Texas
Schuylkill	Bon Homme	Anderson
Snyder	Brookings	Angelina
Somerset	Clark	Bowie
Union	Clay	Camp
Venango	Codington	Cass
Warren	Day	Cherokee
Washington	Deuel	Franklin
Westmoreland	Grant	Gregg
York	Hamlin	Harrison
	Hanson	Henderson
	Hutchinson	Houston
	Kingsbury	Jasper
	Lake	Marion
	Lincoln	Montgomery
	Marshall	Morris
	McCook	Nacogdoches
	Minnehaha	Newton
	Moody	Panola
	Roberts	Polk
	Turner	Rains
	Union	Red River
	Yankton	Rusk
		Sabine
		San Augustine
		San Jacinto
		Shelby
		Smith
		Titus
		Trinity
		Tyler
		Upshur
		Van Zandt
		Walker
		Wood

Zone A Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Wisconsin
Buffalo
Crawford
Grant
Iowa
La Crosse
Lafayette
Monroe
Pepin
Richland
Sauk
Trempealeau
Vernon

Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Michigan	Minnesota	Nebraska
Alcona	Aitkin	Arthur [2]
Alger	Anoka	Banner [2]
Alpena	Becker	Blaine [2]
Antrim	Beltrami	Box Butte [2]
Arenac	Benton	Boyd [2]
Baraga	Carlton	Brown [2]
Charlevoix	Cass	Cherry [2]
Cheboygan	Chisago	Dawes [2]
Chippewa	Clay	Garden [2]
Clare	Clearwater	Garfield [2]
Crawford	Cook	Grant [2]
Delta	Crow Wing	Holt [2]
Dickinson	Hubbard	Hooker [2]
Emmet	Isanti	Keya Paha [2]
Gladwin	Itasca	Kimball [2]
Gogebic	Kanabec	Knox [2]
Grand Traverse	Kittson	Logan [2]
Houghton	Koochiching	Loup [2]
Iosco	Lake	McPherson [2]
Iron	Lake of the Woods	Morrill [2]
Kalkaska	Mahnomen	Rock [2]
Keweenaw	Marshall	Scotts Bluff [2]
Lake	Mille Lacs	Sheridan [2]
Luce	Morrison	Sioux [2]
Mackinac	Norman	Thomas [2]
Marquette	Otter Tail	Wheeler [2]
Menominee	Pennington	
Missaukee	Pine	
Montmorency	Polk	
Ogemaw	Ramsey	
Ontonagon	Red Lake	
Osceola	Roseau	
Oscoda	Sherburne	
Otsego	St. Louis	
Presque Isle	Stearns	
Roscommon	Todd	
Schoolcraft	Traverse	
Wexford	Wadena	
	Washington	
	Wilkin	

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

North Dakota	North Dakota	South Dakota
Adams[3]	Stark[3]	Aurora
Barnes	Steele	Beadle
Benson	Stutsman	Bennett [2]
Billings [2]	Towner	Brown
Bottineau	Traill	Brule
Bowman [2]	Walsh	Buffalo
Burke	Ward	Butte [2]
Burleigh	Wells	Campbell
Cass	Williams[3]	Charles Mix
Cavalier		Corson[3]
Dickey		Custer [2]
Divide[3]		Davison
Dunn[3]		Dewey [2]
Eddy		Douglas
Emmons		Edmunds
Foster		Fall River [2]
Golden Valley		Faulk
Grand Forks		Gregory [2]
Grant[3]		Haakon [2]
Griggs		Hand
Hettinger[3]		Harding [2]
Kidder		Hughes
LaMoure		Hyde
Logan		Jackson [2]
McHenry		Jerauld
McIntosh		Jones [2]
McKenzie		Lawrence [2]
McLean		Lyman [2]
Mercer[3]		McPherson
Morton[3]		Meade [2]
Mountrail		Mellette [2]
Nelson		Miner
Oliver[3]		Pennington [2]
Pembina		Perkins[3]
Pierce		Potter
Ramsey		Sanborn
Ransom		Shannon [2]
Renville		Spink
Richland		Stanley [2]
Rolette		Sully
Sargent		Todd [2]
Sheridan		Tripp [2]
Sioux[3]		Walworth
Slope[2]		Ziebach[3]

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Zone B Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Wisconsin	Wisconsin
Adams	Marathon
Ashland	Marinette
Barron	Marquette
Bayfield	Menominee
Brown	Milwaukee
Burnett	Oconto
Calumet	Oneida
Chippewa	Outagamie
Clark	Ozaukee
Columbia	Pierce
Dane	Polk
Dodge	Portage
Door	Price
Douglas	Racine
Dunn	Rock
Eau Claire	Rusk
Florence	Sawyer
Fond du Lac	Shawano
Forest	Sheboygan
Green	St. Croix
Green Lake	Taylor
Iron	Vilas
Jackson	Walworth
Jefferson	Washburn
Juneau	Washington
Kenosha	Waukesha
Kewaunee	Waupaca
Langlade	Waushara
Lincoln	Winnebago
Manitowoc	Wood

Zone C Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Montana	Wyoming
Big Horn [2]	Campbell [2]
Blaine[3]	Converse [2]
Carter [2]	Crook [2]
Chouteau[3]	Goshen [2]
Custer [2]	Johnson [2]
Daniels[3]	Laramie [2]
Dawson [2]	Niobrara [2]
Fallon [2]	Platte [2]
Fergus [2]	Sheridan [2]
Garfield [2]	Weston [2]
Golden Valley [2]	
Hill[3]	
Liberty[3]	
McCone[3]	
Musselshell [2]	
Petroleum [2]	
Phillips[3]	
Pondera[3]	
Powder River [2]	
Prairie [2]	
Richland[3]	
Roosevelt[3]	
Rosebud [2]	
Sheridan[3]	
Toole[3]	
Treasure [2]	
Valley[3]	
Wheatland [2]	
Wibaux[3]	
Yellowstone [2]	

[2] County is within LRR G or H

[3] County is within MRLA 52, 53A or 54

Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Colorado	Kansas	Nebraska
Adams [2]	Cheyenne [2]	Chase [2]
Arapahoe [2]	Clark [2]	Cheyenne [2]
Baca [2]	Comanche [2]	Deuel [2]
Bent [2]	Finney [2]	Dundy [2]
Cheyenne [2]	Gove [2]	Hitchcock [2]
Crowley [2]	Grant [2]	Keith [2]
Denver [2]	Greeley [2]	Lincoln [2]
Elbert [2]	Hamilton [2]	Perkins [2]
Kiowa [2]	Haskell [2]	
Kit Carson [2]	Kearny [2]	
Las Animas [2]	Lane [2]	
Lincoln [2]	Logan [2]	
Logan [2]	Meade [2]	
Morgan [2]	Morton [2]	
Otero [2]	Rawlins [2]	
Phillips [2]	Scott [2]	
Prowers [2]	Seward [2]	
Pueblo [2]	Sheridan [2]	
Sedgwick [2]	Sherman [2]	
Washington [2]	Stanton [2]	
Weld [2]	Stevens [2]	
Yuma [2]	Thomas [2]	
	Wallace [2]	
	Wichita [2]	

[2] County is within LRR G or H

Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

New Mexico	Oklahoma	Texas
Chaves [2]	Beaver [2]	Andrews [2]
Colfax [2]	Beckham [2]	Archer [2]
Curry [2]	Caddo [2]	Armstrong [2]
De Baca [2]	Cimarron [2]	Atascosa
Eddy [2]	Comanche [2]	Bailey [2]
Guadalupe [2]	Cotton [2]	Bandera
Harding [2]	Custer [2]	Baylor [2]
Lea [2]	Dewey [2]	Bee
Lincoln [2]	Ellis [2]	Bexar
Mora [2]	Greer [2]	Blanco
Quay [2]	Harmon [2]	Borden [2]
Roosevelt [2]	Harper [2]	Briscoe [2]
San Miguel [2]	Jackson [2]	Brooks
Santa Fe [2]	Jefferson [2]	Brown [2]
Torrance [2]	Kiowa [2]	Callahan [2]
Union [2]	Roger Mills [2]	Cameron
	Stephens [2]	Carson [2]
	Texas [2]	Castro [2]
	Tillman [2]	Childress [2]
	Washita [2]	Clay [2]
	Woods [2]	Cochran [2]
	Woodward [2]	Coke [2]
		Coleman [2]
		Collingsworth [2]
		Comal
		Concho [2]
		Cottle [2]
		Crockett
		Crosby [2]
		Dallam [2]
		Dawson [2]
		Deaf Smith [2]
		DeWitt
		Dickens [2]
		Dimmit
		Donley [2]
		Duval
		Ector [2]
		Edwards
		Fisher [2]
		Floyd [2]
		Foard [2]
		Frio
		Gaines [2]
		Garza [2]

[2] County is within LRR G or H

Zone D Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Texas	Texas
Gillespie	Mitchell [2]
Glasscock	Montague [2]
Goliad	Moore [2]
Gray [2]	Motley [2]
Hale [2]	Nolan [2]
Hall [2]	Ochiltree [2]
Hansford [2]	Oldham [2]
Hardeman [2]	Palo Pinto [2]
Hartley [2]	Parmer [2]
Haskell [2]	Potter [2]
Hays	Randall [2]
Hemphill [2]	Reagan
Hidalgo	Real
Hockley [2]	Roberts [2]
Howard [2]	Runnels [2]
Hutchinson [2]	San Saba
Irion	Schleicher
Jack [2]	Scurry [2]
Jim Hogg	Shackelford [2]
Jim Wells	Sherman [2]
Jones [2]	Starr
Karnes	Stephens [2]
Kendall	Sterling
Kenedy	Stonewall [2]
Kent [2]	Sutton
Kerr	Swisher [2]
Kimble	Taylor [2]
King [2]	Terrell
Kinney	Terry [2]
Kleberg	Throckmorton [2]
Knox [2]	Tom Green [2]
La Salle	Travis
Lamb [2]	Upton
Lipscomb [2]	Uvalde
Live Oak	Val Verde
Llano	Webb
Lubbock [2]	Wheeler [2]
Lynn [2]	Wichita [2]
Martin [2]	Wilbarger [2]
Mason	Willacy
Maverick	Williamson
McCulloch	Wilson
McMullen	Yoakum [2]
Medina	Young [2]
Menard	Zapata
Midland [2]	Zavala

[2] County is within LRR G or H

Zone E Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Kansas	Louisiana	Nebraska
Barber [2]	Acadia	Franklin [2]
Barton [2]	Allen	Frontier [2]
Decatur [2]	Calcasieu	Furnas [2]
Edwards [2]	Cameron	Gosper [2]
Ellis [2]	Evangeline	Harlan [2]
Ford [2]	Jefferson Davis	Hayes [2]
Graham [2]	Lafourche	Red Willow [2]
Gray [2]	Plaquemines	Webster [2]
Harper [2]	St. Bernard	
Hodgeman [2]	Terrebonne	
Jewell [2]	Vermilion	
Kingman [2]		
Kiowa [2]		
Mitchell [2]		
Ness [2]		
Norton [2]		
Osborne [2]		
Pawnee [2]		
Phillips [2]		
Pratt [2]		
Reno [2]		
Rooks [2]		
Rush [2]		
Russell [2]		
Smith [2]		
Stafford [2]		
Sumner [2]		
Trego [2]		

[2] County is within LRR G or H

Zone E Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Oklahoma	Texas	Texas
Alfalfa [2]	Aransas	Hill
Blaine [2]	Austin	Hood
Canadian [2]	Bastrop	Hopkins
Carter	Bell	Hunt
Cleveland [2]	Bosque	Jackson
Coal	Brazoria	Jefferson
Creek	Brazos	Johnson
Garfield [2]	Burleson	Kaufman
Garvin	Burnet	Lamar
Grady	Caldwell	Lampasas
Grant [2]	Calhoun	Lavaca
Johnston	Chambers	Lee
Kay [2]	Collin	Leon
Kingfisher [2]	Colorado	Liberty
Lincoln	Comanche	Limestone
Logan [2]	Cooke	Madison
Love	Coryell	Matagorda
Major [2]	Dallas	McLennan
Marshall	Delta	Milam
McClain [2]	Denton	Mills
Murray	Eastland	Navarro
Noble [2]	Ellis	Nueces
Oklahoma [2]	Erath	Orange
Pawnee [2]	Falls	Parker
Payne [2]	Fannin	Refugio
Pontotoc	Fayette	Robertson
Pottawatomie	Fort Bend	Rockwall
Seminole	Freestone	San Patricio
	Galveston	Somervell
	Gonzales	Tarrant
	Grayson	Victoria
	Grimes	Waller
	Guadalupe	Washington
	Hamilton	Wharton
	Hardin	Wise
	Harris	

[2] County is within LRR G or H

Zone F Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

Arkansas	Missouri	Oklahoma
Baxter	Barry	Adair
Benton	Benton	Atoka
Boone	Bollinger	Cherokee
Carroll	Camden	Delaware
Cleburne	Carter	Haskell
Conway	Cedar	Hughes
Crawford	Christian	Latimer
Faulkner	Crawford	Le Flore
Franklin	Dade	McCurtain
Fulton	Dallas	McIntosh
Garland	Dent	Pittsburg
Hot Spring	Douglas	Pushmataha
Independence	Franklin	Sequoyah
Izard	Greene	
Johnson	Hickory	
Logan	Howell	
Madison	Iron	
Marion	Jefferson	
Montgomery	Laclede	
Newton	Lawrence	
Perry	Madison	
Pike	Maries	
Polk	McDonald	
Pope	Miller	
Randolph	Morgan	
Saline	Newton	
Scott	Oregon	
Searcy	Ozark	
Sebastian	Phelps	
Sharp	Polk	
Stone	Pulaski	
Van Buren	Reynolds	
Washington	Ripley	
White	Shannon	
Yell	St. Clair	
	St. Francois	
	Ste. Genevieve	
	Stone	
	Taney	
	Texas	
	Washington	
	Wayne	
	Webster	
	Wright	

Zone G Counties that Qualify for Exchange Soil Offsets for Conservation Tillage

New York
Cayuga
Erie
Genesee
Livingston
Madison
Monroe
Montgomery
Niagara
Oneida
Onondaga
Ontario
Orleans
Oswego
Schenectady
Seneca
Wayne
Yates

Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Entire State	Colorado	Colorado
Alabama	Adams	Logan
Arkansas	Alamosa	Mineral
Connecticut	Arapahoe	Morgan
Delaware	Archuleta	Otero
Florida	Baca	Ouray
Georgia	Bent	Park
Illinois	Boulder	Phillips
Indiana	Broomfield	Pitkin
Iowa	Chaffee	Prowers
Kansas	Cheyenne	Pueblo
Kentucky	Clear Creek	Rio Grande
Louisiana	Conejos	Routt
Maine	Costilla	Saguache
Maryland	Crowley	San Juan
Massachusetts	Custer	Sedgwick
Michigan	Denver	Summit
Minnesota	Douglas	Teller
Missouri	Eagle	Washington
Montana	El Paso	Weld
Nebraska	Elbert	Yuma
New Hampshire	Fremont	
New Jersey	Garfield	
New York	Gilpin	
North Carolina	Grand	
North Dakota	Gunnison	
Ohio	Hinsdale	
Pennsylvania	Huerfano	
Rhode Island	Jackson	
South Carolina	Jefferson	
South Dakota	Kiowa	
Tennessee	Kit Carson	
Vermont	Lake	
Virginia	Larimer	
West Virginia	Las Animas	
Wisconsin	Lincoln	

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Idaho	New Mexico	Oklahoma
Adams	Colfax	Adair
Benewah	Rio Arriba	Alfalfa
Boise	Taos	Atoka
Bonner		Beaver
Boundary		Bryan
Clearwater		Canadian
Custer		Carter
Idaho		Cherokee
Kootenai		Choctaw
Shoshone		Cimarron
Valley		Cleveland
		Coal
		Craig
		Creek
		Delaware
		Garfield
		Garvin
		Grady
		Grant
		Harper
		Haskell
		Hughes
		Jefferson
		Johnston
		Kay
		Kingfisher
		Latimer
		Le Flore
		Lincoln
		Logan
		Love

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Oklahoma	Oregon	Texas
Major	Benton	Anderson
Marshall	Clackamas	Angelina
Mayes	Clatsop	Aransas
McClain	Columbia	Austin
McCurtain	Coos	Bastrop
McIntosh	Curry	Bell
Murray	Douglas	Bosque
Muskogee	Grant	Bowie
Noble	Hood River	Brazoria
Nowata	Jackson	Brazos
Okfuskee	Josephine	Burleson
Oklahoma	Lane	Burnet
Okmulgee	Lincoln	Caldwell
Osage	Linn	Calhoun
Ottawa	Marion	Camp
Pawnee	Multnomah	Cass
Payne	Polk	Chambers
Pittsburg	Tillamook	Cherokee
Pontotoc	Union	Collin
Pottawatomie	Wallowa	Colorado
Pushmataha	Washington	Comanche
Rogers	Yamhill	Cooke
Seminole		Coryell
Sequoyah		Dallas
Stephens		Delta
Texas		Denton
Tulsa		Eastland
Wagoner		Ellis
Washington		Erath
Woods		Falls
Woodward		Fannin
		Fayette
		Fort Bend
		Franklin
		Freestone
		Galveston
		Gonzales
		Grayson
		Gregg
		Grimes

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Utah
Guadalupe	Newton	Cache
Hamilton	Nueces	Carbon
Hardin	Orange	Daggett
Harris	Panola	Duchesne
Harrison	Parker	Morgan
Henderson	Polk	Rich
Hill	Rains	Summit
Hood	Red River	Utah
Hopkins	Refugio	Wasatch
Houston	Robertson	
Hunt	Rockwall	
Jackson	Rusk	
Jasper	Sabine	
Jefferson	San Augustine	
Johnson	San Jacinto	
Kaufman	San Patricio	
Lamar	Shelby	
Lampasas	Smith	
Lavaca	Somervell	
Lee	Tarrant	
Leon	Titus	
Liberty	Trinity	
Limestone	Tyler	
Madison	Upshur	
Marion	Van Zandt	
Matagorda	Victoria	
McLennan	Walker	
Milam	Waller	
Mills	Washington	
Montgomery	Wharton	
Morris	Wise	
Nacogdoches	Wood	
Navarro		

Zone A Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Washington	Wyoming
Clallam	Big Horn
Clark	Campbell
Cowlitz	Converse
Ferry	Crook
Grays Harbor	Goshen
Island	Hot Springs
Jefferson	Johnson
King	Laramie
Kitsap	Lincoln
Lewis	Niobrara
Mason	Park
Pacific	Platte
Pend Oreille	Sheridan
Pierce	Sublette
San Juan	Teton
Skagit	Uinta
Skamania	Weston
Snohomish	
Stevens	
Thurston	
Wahkiakum	
Whatcom	

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Entire State	Colorado	Idaho
Arizona	Delta	Ada
California	Dolores	Bannock
Nevada	La Plata	Bear Lake
	Mesa	Bingham
	Moffat	Blaine
	Montezuma	Bonneville
	Montrose	Butte
	Rio Blanco	Camas
	San Miguel	Canyon
		Caribou
		Cassia
		Clark
		Elmore
		Franklin
		Fremont
		Gem
		Gooding
		Jefferson
		Jerome
		Latah
		Lemhi
		Lewis
		Lincoln
		Madison
		Minidoka
		Nez Perce
		Oneida
		Owyhee
		Payette
		Power
		Teton
		Twin Falls
		Washington

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

New Mexico	Oklahoma	Oregon
Bernalillo	Beckham	Baker
Catron	Blaine	Crook
Chaves	Caddo	Deschutes
Cibola	Comanche	Gilliam
Curry	Cotton	Harney
De Baca	Custer	Jefferson
Dona Ana	Dewey	Klamath
Eddy	Ellis	Lake
Grant	Greer	Malheur
Guadalupe	Harmon	Morrow
Harding	Jackson	Sherman
Hidalgo	Kiowa	Umatilla
Lea	Rogers Mills	Wasco
Lincoln	Tillman	Wheeler
Los Alamos	Washita	
Luna		
McKinley		
Mora		
Otero		
Quay		
Roosevelt		
San Juan		
San Miguel		
Sandoval		
Santa Fe		
Sierra		
Socorro		
Torrance		
Union		
Valencia		

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Texas
Andrews	Dallam	Hudspeth
Archer	Dawson	Hutchinson
Armstrong	Deaf Smith	Irion
Atascosa	DeWitt	Jack
Bailey	Dickens	Jeff Davis
Bandera	Dimmit	Jim Hogg
Baylor	Donley	Jim Wells
Bee	Duval	Jones
Bexar	Ector	Karnes
Blanco	Edwards	Kendall
Borden	El Paso	Kenedy
Brewster	Fisher	Kent
Briscoe	Floyd	Kerr
Brooks	Foard	Kimble
Brown	Frio	King
Callahan	Gaines	Kinney
Cameron	Garza	Kleberg
Carson	Gillespie	Knox
Castro	Glasscock	La Salle
Childress	Goliad	Lamb
Clay	Gray	Lipscomb
Cochran	Hale	Live Oak
Coke	Hall	Llano
Coleman	Hansford	Loving
Collingsworth	Hardeman	Lubbock
Comal	Hartley	Lynn
Concho	Haskell	Martin
Cottle	Hays	Mason
Crane	Hemphill	Maverick
Crockett	Hidalgo	McCulloch
Crosby	Hockley	McMullen
Culberson	Howard	Medina

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Texas	Texas	Utah
Menard	Sterling	Beaver
Midland	Stonewall	Box Elder
Mitchell	Sutton	Davis
Montague	Swisher	Emery
Moore	Taylor	Garfield
Motley	Terrell	Grand
Nolan	Terry	Iron
Ochiltree	Throckmorton	Juab
Oldham	Tom Green	Kane
Palo Pinto	Travis	Millard
Parmer	Upton	Piute
Pecos	Uvalde	Salt Lake
Potter	Val Verde	San Juan
Presidio	Ward	Sanpete
Randall	Webb	Sevier
Reagan	Wheeler	Tooele
Real	Wichita	Uintah
Reeves	Wilbarger	Washington
Roberts	Willacy	Wayne
Runnels	Williamson	Weber
San Saba	Wilson	
Schleicher	Winkler	
Scurry	Yoakum	
Shackelford	Young	
Sherman	Zapata	
Starr	Zavala	
Stephens		

Zone B Counties that Qualify for Exchange Soil Offsets for Grassland Planting

Washington	Wyoming
Adams	Albany
Asotin	Carbon
Benton	Fremont
Chelan	Natrona
Columbia	Sweetwater
Douglas	Washakie
Franklin	
Garfield	
Grant	
Kittitas	
Klickitat	
Lincoln	
Okanogan	
Spokane	
Walla Walla	
Whitman	
Yakima	

Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Idaho	Oregon	Washington
Ada	Baker	Adams
Bannock	Crook	Asotin
Bear Lake	Deschutes	Benton
Bingham	Gilliam	Chelan
Blaine	Jefferson	Columbia
Bonneville	Morrow	Douglas
Butte	Sherman	Franklin
Camas	Umatilla	Garfield
Canyon	Wasco	Grant
Caribou	Wheeler	Kittitas
Cassia		Klickitat
Clark		Lincoln
Elmore		Okanogan
Fremont		Spokane
Gem		Walla Walla
Gooding		Whitman
Jefferson		Yakima
Jerome		
Latah		
Lemhi		
Lewis		
Lincoln		
Madison		
Minidoka		
Nez Perce		
Payette		
Power		
Teton		
Washington		

LRR C - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

California		
Alameda	Marin	Santa Clara
Butte	Merced	Santa Cruz
Calaveras	Monterey	Solano
Colusa	Napa	Sonoma
Contra Costa	Orange	Stanislaus
Fresno	Sacramento	Sutter
Glenn	San Benito	Tehama
Kern	San Diego	Ventura
Kings	San Joaquin	Yolo
Lake	San Luis Obispo	Yuba
Los Angeles	San Mateo	
Madera	Santa Barbara	

LRR E - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Colorado	Idaho	Montana
Alamosa	Adams	Beaverhead
Archuleta	Benewah	Broadwater
Boulder	Boise	Carbon
Broomfield	Bonner	Cascade
Chaffee	Boundary	Deer Lodge
Clear Creek	Clearwater	Flathead
Conejos	Custer	Gallatin
Costilla	Idaho	Glacier
Custer	Kootenai	Granite
Douglas	Shoshone	Jefferson
Eagle	Valley	Judith Basin
El Paso		Lake
Fremont		Lewis and Clark
Garfield		Lincoln
Gilpin		Madison
Grand		Meagher
Gunnison		Mineral
Hinsdale		Missoula
Huerfano		Park
Jackson		Powell
Jefferson		Ravalli
Lake		Sanders
Larimer		Silver Bow
Mineral		Stillwater
Ouray		Sweet Grass
Park		Teton
Pitkin		
Rio Grande		
Routt		
Saguache		
San Juan		
Summit		
Teller		

LRR E - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

New Mexico	Oregon	Utah
Colfax	Grant	Cache
Rio Arriba	Union	Carbon
Taos	Wallowa	Daggett
		Duchesne
		Morgan
		Rich
		Summit
		Utah
		Wasatch

LRR E - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Washington	Wyoming
Ferry	Big Horn
Pend Oreille	Hot Springs
Stevens	Lincoln
	Park
	Sublette
	Teton
	Uinta

LRR F - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Montana	North Dakota		South Dakota
Blaine	Adams	Ramsey	Aurora
Chouteau	Barnes	Ransom	Beadle
Daniels	Benson	Renville	Brown
Hill	Bottineau	Richland	Brule
Liberty	Burke	Rolette	Buffalo
McCone	Burleigh	Sargent	Campbell
Phillips	Cass	Sheridan	Charles Mix
Pondera	Cavalier	Sioux	Corson
Richland	Dickey	Stark	Davison
Roosevelt	Divide	Steele	Douglas
Sheridan	Dunn	Stutsman	Edmunds
Toole	Eddy	Towner	Faulk
Valley	Emmons	Traill	Hand
Wibaux	Foster	Walsh	Hughes
	Golden Valley	Ward	Hyde
	Grand Forks	Wells	Jerauld
	Grant	Williams	McPherson
	Griggs		Perkins
	Hettinger		Potter
	Kidder		Sanborn
	LaMoure		Spink
	Logan		Sully
	McHenry		Walworth
	McIntosh		Ziebach
	McKenzie		
	McLean		
	Mercer		
	Morton		
	Mountrail		
	Nelson		
	Oliver		
	Pembina		
	Pierce		

LRR G - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Colorado	Montana	Nebraska
Adams	Big Horn	Arthur
Arapahoe	Carter	Banner
Bent	Custer	Blaine
Cheyenne	Dawson	Box Butte
Crowley	Fallon	Boyd
Denver	Fergus	Brown
Elbert	Garfield	Cherry
Kiowa	Golden Valley	Dawes
Kit Carson	Musselshell	Garden
Las Animas	Petroleum	Garfield
Lincoln	Powder River	Grant
Morgan	Prairie	Holt
Otero	Rosebud	Hooker
Prowers	Treasure	Keya Paha
Pueblo	Wheatland	Kimball
Washington	Yellowstone	Knox
Weld		Logan
		Loup
		McPherson
		Morrill
		Rock
		Scotts Bluff
		Sheridan
		Sioux
		Thomas
		Wheeler

LRR G - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

New Mexico	North Dakota	South Dakota	Wyoming
Chaves	Billings	Bennett	Campbell
De Baca	Bowman	Butte	Converse
Guadalupe	Slope	Custer	Crook
Lincoln		Dewey	Goshen
Mora		Fall River	Johnson
Quay		Gregory	Laramie
San Miguel		Haakon	Niobrara
Santa Fe		Harding	Platte
Torrance		Jackson	Sheridan
		Jones	Weston
		Lawrence	
		Lyman	
		Meade	
		Mellette	
		Pennington	
		Shannon	
		Stanley	
		Todd	
		Tripp	

LRR H - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Colorado	Kansas	
Baca	Barber	McPherson
Logan	Barton	Meade
Phillips	Butler	Mitchell
Sedgwick	Chase	Morris
Yuma	Cheyenne	Morton
	Clark	Ness
	Clay	Norton
	Cloud	Osage
	Comanche	Osborne
	Cowley	Ottawa
	Decatur	Pawnee
	Dickinson	Phillips
	Edwards	Pottawatomie
	Elk	Pratt
	Ellis	Rawlins
	Ellsworth	Reno
	Finney	Republic
	Ford	Rice
	Geary	Riley
	Gove	Rooks
	Graham	Rush
	Grant	Russell
	Gray	Saline
	Greeley	Scott
	Greenwood	Sedgwick
	Hamilton	Seward
	Harper	Sheridan
	Harvey	Sherman
	Haskell	Smith
	Hodgeman	Stafford
	Jewell	Stanton
	Kearny	Stevens
	Kingman	Sumner
	Kiowa	Thomas
	Lane	Trego
	Lincoln	Wabaunsee
	Logan	Wallace
	Marion	Washington
	Marshall	Wichita

LRR H - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Nebraska	New Mexico	Oklahoma
Adams	Curry	Alfalfa
Buffalo	Harding	Beaver
Butler	Lea	Beckham
Chase	Roosevelt	Blaine
Cheyenne	Union	Caddo
Clay		Canadian
Custer		Cimarron
Dawson		Cleveland
Deuel		Comanche
Dundy		Cotton
Fillmore		Custer
Franklin		Dewey
Frontier		Ellis
Furnas		Garfield
Gosper		Grant
Greeley		Greer
Hall		Harmon
Hamilton		Harper
Harlan		Jackson
Hayes		Jefferson
Hitchcock		Kay
Howard		Kingfisher
Jefferson		Kiowa
Kearney		Logan
Keith		Major
Lincoln		McClain
Merrick		Noble
Nuckolls		Oklahoma
Perkins		Pawnee
Phelps		Payne
Polk		Roger Mills
Red Willow		Texas
Saline		Tillman
Seward		Washita
Sherman		Woods
Thayer		Woodward
Valley		
Webster		
York		

LRR H - Counties that Qualify for Exchange Soil Offsets for Sustainable Rangeland Management

Texas	
Andrews	Hutchinson
Archer	Jack
Armstrong	Jones
Bailey	Kent
Baylor	King
Borden	Knox
Briscoe	Lamb
Brown	Lipscomb
Callahan	Lubbock
Carson	Lynn
Castro	Martin
Childress	Midland
Clay	Mitchell
Cochran	Montague
Coke	Moore
Coleman	Motley
Collingsworth	Nolan
Concho	Ochiltree
Cottle	Oldham
Crosby	Palo Pinto
Dallam	Parmer
Dawson	Potter
Deaf Smith	Randall
Dickens	Roberts
Donley	Runnels
Ector	Scurry
Fisher	Shackelford
Floyd	Sherman
Foard	Stephens
Gaines	Stonewall
Garza	Swisher
Gray	Taylor
Hale	Terry
Hall	Throckmorton
Hansford	Tom Green
Hardeman	Wheeler
Hartley	Wichita
Haskell	Wilbarger
Hemphill	Yoakum
Hockley	Young
Howard	

Appendix 2 Eligible Commercial Entity Questionnaire

CHICAGO CLIMATE EXCHANGE (CCX®)
APPLICATION FOR MEMBERSHIP

Eligible Commercial Entity Questionnaire

As an exempt market, all membership categories that will be entering into transactions on the CCX Trading Platform must qualify as an Eligible Commercial Entity ("ECE"). This questionnaire is required only for applicants who meet the requirements to enter trades directly via the CCX Trading Platform. This questionnaire must be completed by all applicants who qualify and can be used as a guide for all applicants to determine if they meet the requirements of an ECE.

There are four categories under which an applicant may qualify as an Eligible Commercial Entity ("ECE"). These categories are depicted on the attached pages as categories A, B, C and D. The applicant need only qualify under **one of the four** categories. For example, if the applicant qualifies under category A, it is not necessary to proceed to categories B, C and D. To qualify under a particular category, you must be able to check at least one box in Column I and one box in Column II to be considered an ECE.

The four categories are described briefly below:

Category A	***This category is for certain types of entities (described in column II)*** *that are engaged in a commercial activity* ***related to the commodity (described in column I).***
Category B	***This category is for certain types of entities (described in column II)*** *that are not engaged in the commercial activity* ***related to the commodity but meet certain financial qualifications (described in column I)***
Category C	***This category is for*** *certain types of collective investment vehicles* ***(described in column I)*** *that are not engaged in the commercial activity* ***related to the commodity. Depending on their participants, certain financial qualifications must be met (described in column II)***
Category D	***This category is for*** *registered floor brokers or floor traders* ***(described in column I) that meet certain qualifications (described in column II)***

Due to the nature of the CCX emission reduction/offset program, Members and Associate Members will be deemed to be engaging in a commercial activity and will generally fall into Category A.

All other membership categories must determine which category best fits their operations and complete the form accordingly.

IT IS ACCEPTABLE TO COMPLETE AND RETURN ONLY THE PAGE CONTAINING THE CATEGORY UNDER WHICH YOU QUALIFY AS AN ECE.

The term ``commodity'' as used in this section and in the following pages is defined in Section 1a(4) of the Commodity Exchange Act as wheat, cotton, rice, corn, oats, barley, rye, flaxseed, grain sorghums, mill feeds, butter, eggs, Solanum tuberosum (Irish potatoes), wool, wool tops, fats and oils (including lard, tallow, cottonseed oil, peanut oil, soybean oil, and all other fats and oils), cottonseed meal, cottonseed, peanuts, soybeans, soybean meal, livestock, livestock products, and frozen concentrated orange juice, and all other goods and articles, except onions as provided in section 13-1 of this title, and all services, rights, and interests in which contracts for future delivery are presently or in the future dealt in.

To qualify as an Eligible Commercial Entity, you must be able to check one box in Column I and one box in Column II.

Column I **Applicant, in connection with its trade or business:**		Column II **Applicant is acting for its own account and is (check all that apply):**	
		1. a financial institution (as defined by the CEA);	☐
		or	
		2. an insurance company (regulated by a State by a foreign government and is subject to comparable regulation as determined by the CFTC, including a regulated subsidiary or affiliate of such insurance company);	☐
		or	
1. has demonstrable ability, directly or though separate contractual ability, to make or take delivery of the underlying commodity;	☐	**3. a corporation, partnership, proprietorship, organization, trust or other entity—**	
		a. that has total assets exceeding $10 million;	☐
		or	
or	AND	**b. the obligations of which under an agreement, contract, or transaction are guaranteed or otherwise supported by a letter of credit or keepwell, support or other agreement by an entity described under Section 1 (a)(12)(v)(II) of the CEA;**	☐
		or	
		c. has a net worth of $1 million and is trading for hedging purposes.	☐
		or	
		4. a governmental entity (domestic or foreign) or political subdivision of a governmental entity, a multinational or supranational government entity, or an instrumentality, agency or department of any of the above.	☐
2. incurs risks, in addition to price risk, related to the commodity;	☐	or	
		5. a broker/dealer subject to regulation under the Securities and Exchange Act of 1934 or a futures commission merchant subject to the Commodity Exchange Act, (or a foreign entity performing a similar role or function, subject to foreign regulation)9.	☐
or		or	
		6. an associated person of a registered broker/dealer.	☐
		or	
3. is a dealer that regularly provides risk management or other hedging services to, or engages in market-making activities with, the foregoing entities involving transactions to purchase or sell the commodity or derivative agreements, contracts, or transactions in the commodity.	☐	**7. an investment bank holding company.**	☐

Category A

Category B

To qualify as an Eligible Commercial Entity, you must be able to check one box in Column I and one box in Column II.

Column I		Column II
Applicant has or is one of a group of entities under common control or management having in the aggregate $100 million in total assets. ☐	AND	**Applicant regularly enters into transactions to purchase or sell the commodities traded on CCX and is one of the following types of entities:** **1. a financial institution (as defined by the CEA);** ☐ or **2. an insurance company (regulated by a State by a foreign government and is subject to comparable regulation as determined by the CFTC, including a regulated subsidiary or affiliate of such insurance company);** ☐ or **3. a corporation, partnership, proprietorship, organization, trust or other entity—** ☐ **a. that has total assets exceeding $10 million;** ☐ or **b. the obligations of which under an agreement, contract, or transaction are guaranteed or otherwise supported by a letter of credit or keepwell, support or other agreement by an entity described under Section 1 (a)(12)(v)(II) of the CEA;** ☐ or **c. has a net worth of $1 million and is trading for hedging purposes;** or **4. a governmental entity (domestic or foreign) or political subdivision of a governmental entity, a multinational or supranational government entity, or an instrumentality, agency or department of any of a national government that either:** ☐ **a. owns and invests on a discretionary basis $25 million or more in investments** ☐ or **b. enters into transactions only with entities described in 1, 2, 5, 6, or 7 in Section I or with an affiliated person of an FCM.** ☐

9 If the broker/dealer or FCM is a natural person, other requirements apply. See Section 1(a)(12)(A)(viii) and (ix) of the Commodity Exchange Act.

		or **5. a broker/dealer subject to regulation under the SEC Act of 1934 or a futures commission merchant subject to the CEA, (or a foreign entity performing a similar role or function, subject to foreign regulation)10;** ☐ or **6. an investment bank holding company.**

To qualify as an Eligible Commercial Entity, you must be able to check one box in Column I and one box in Column II.		
Column I **Applicant regularly enters into transactions to purchase or sell the commodities traded on CCX and is a collective investment vehicle, which is defined as the following:** **1. an investment company registered under the Investment Company Act of 1940 or a foreign entity performing a similar function subject to foreign regulation;** ☐ or **2. a commodity pool that has total assets exceeding $5 million and is formed and operated by a registered commodity pool operator or a foreign entity performing a similar function subject to foreign regulation;** ☐ or **3. an ERISA plan, a governmental benefit plan or a foreign entity performing a similar function** ☐	AND	Column II **Applicant is:** **1. A collective investment vehicle (as defined in column I) whose participants include:** ☐ • **Qualified Eligible Persons as defined by CFTC Rule 4.7(a); or** • **Accredited Investors as defined in SEC Regulation D; or** • **Qualified Purchasers as defined in section 2(a)(51)(A) of the Investment Company Act of 1940** **that has or is one of a group of vehicles under common control or management having in the aggregate $100 million in total assets.** or ☐ **2. A collective investment vehicle (as defined in column I) whose participants** do not **include:** • **Qualified Eligible Persons; or**

10 If the broker/dealer or FCM is a natural person, it does not qualify as an ECE under this provision of the Commodity Exchange Act.

Category C **bject to foreign regulation that total assets exceeding $5 million or whose investment decisions are made by an registered investment adviser, a registered commodity trading advisor, a foreign entity performing a similar function subject to foreign regulation, a financial institution or insurance company.**		• **Accredited Investors; or** • **Qualified Purchasers** **that has or is one of a group of vehicles under common control or management having in the aggregate $1 billion in total assets**.

Category D

To qualify as an Eligible Commercial Entity, you must be able to check one box in Column I and one box in Column II.

Column I		Column II
Applicant is:		**Applicant:**
A CFTC registered floor broker or floor trader trading for its own account that is a member of a designated contract market or has trading privileges on a designated contract market. ☐	AND	**1. has total assets exceeding $10 million;** ☐ or **2. has total assets exceeding $5 million and is trading for hedging purposes;** ☐ or **3. has their trades on CCX guaranteed by a clearing member that is a member of a CFTC-registered derivatives clearing organization.** ☐

Appendix 3 – Greenhouse Gas Emission Factors For Direct Emission Sources

Stationary Emission Sources

Table 1 provides greenhouse gas (GHG) emission factors for combustion of common fossil fuels at stationary (non-transport) sources.

Table 1 Stationary Emission Sources

Fuel Type	Metric Tons CO_2 per Gigajoule	Metric Tons CO_2 per mmBTU	Metric Tons CO_2 per Cubic Meter	Metric Tons CO_2 per 1000 Cubic Feet	Metric Tons CO_2 per Liter	Metric Tons CO_2 per Gallon	Metric Tons CO_2 per Metric Ton Fuel	Metric Tons CO_2 per Short Ton Fuel
Natural Gas	0.050	0.053	0.002	0.055	-	-	-	-
Propane	0.060	0.063	-	-	0.002	0.006	-	-
LPG	0.060	0.063	-	-	0.002	0.006	-	-
Kerosene	0.069	0.072	-	-	0.003	0.010	-	-
Distillate Fuel (#1, #2, #4 heating oil & Diesel)	0.069	0.073	-	-	0.003	0.010	-	-
Residual Fuel (#5 and #6 heating oil)	0.075	0.079	-	-	0.003	0.012	-	-
Anthracite	0.098	0.103	-	-	-	-	1.930	1.750
Bituminous Coal	0.088	0.093	-	-	-	-	2.470	2.240
Sub-Bituminous Coal	0.091	0.096	-	-	-	-	1.860	1.690
Lignite	0.093	0.098	-	-	-	-	1.400	1.270
Peat	0.101	0.106	-	-	-	-	-	-
Petroleum Coke	0.097	0.102	-	-	0.004	0.015	3.380	3.070

Source: *World Resources Institute GHG Calculation Tools for Stationary Emission Sources available at: http://www.ghgprotocol.org/templates/GHG5/layout.asp?type=p&MenuId=OTAx prior to October 2006*
Note: *Emissions based on high heating values where applicable*

Mobile Emission Sources

Table 2 provides GHG emission factors for the combustion of common fossil fuels at mobile sources involving road and air transport.

Table 2 Mobile Emission Sources				
Fuel Type	**Metric Tons CO_2 per Liter**	**Metric Tons CO_2 per Gallon**	**Metric Tons CO_2 per Cubic Meter**	**Metric Tons CO_2 per Therm**
Gasoline	0.0024	0.0092	-	-
Diesel	0.0027	0.0104	-	-
Jet Fuel	-	0.0100	-	-
Aviation Gasoline	0.0024	0.0090	-	-
LPG	0.0016	0.0060	-	-
CNG	-	-	0.0022	0.0054

Source: *World Resources Institute GHG Calculation Tools for Stationary Emission Sources available at:*
http://www.ghgprotocol.org/templates/GHG5/layout.asp?type=p&MenuId=OTAx

Greenhouse Gas Emission Factors for Electricity Purchases (Indirect Emissions)

Phase I Electricity Purchase Conversion Factors

During Phase I program years (2003-2006), the conversion factors outlined in the table below will apply. These conversion factors represent the respective average national emissions rates for electricity production during the Phase I CCX Baseline Period (1998-2001).

Table 3 Phase I Purchased Electricity Emission Factors	
Location of Facilities	**Metric Tons CO_2 per Purchased Megawatt Hour**
United States	0.61
Canada	0.20
Mexico	0.59

Phase II Electricity Purchase Conversion Factors

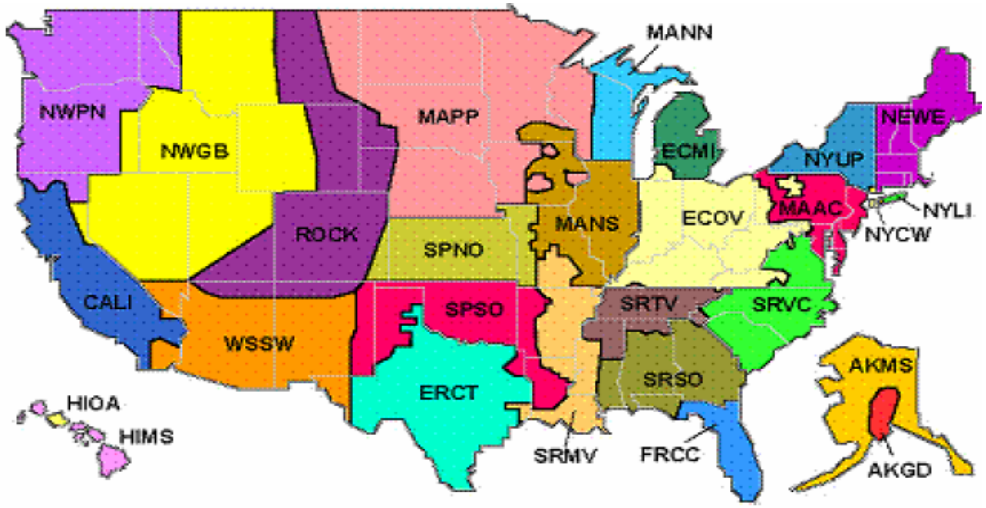
During Phase II Members operating within a single region as defined by the National American Electric Reliability Council (NERC), CCX will use the applicable regional conversion factor in determining the CFIs to be allocated based on a Member's annual objective for electricity purchases and the annual CFI requirement for the Committee approved electricity purchases. **See Table 4 and Figure 1 for Phase II regional purchased electricity emission factors.**

For Members operating in multiple NERC regions, CCX will use the applicable national conversion factor in determining the annual CFIs to be allocated based on a Member's annual objective for electricity purchases and the annual CFI requirement for the Committee approved electricity purchases.

Please view Advisory 2007-01 at http://www.chicagoclimateexchange.com/info/advisories/2007/2007-01.pdf for additional details.

Table 4 Phase II Purchased Electricity Emission Factors		
NERC Region	**NERG sub-regions in the region**	**Metric Tons CO_2 per purchased Megawatt Hour**
ASCC	**All Alaska**	0.49
ECAR	**ECMI, ECOV**	0.82
ARCOT	**ERCT**	0.64
FRCC	**FRCC**	0.63
HICC	**All Hawaii**	0.78
MAAC	**MAAC**	0.50
MAIN	**MANN, MANS**	0.68
MAPP	**MAPP**	0.83
NPCC	**NYLI, NYCW, NEWE, NYUP**	0.51
SERC	**SRMV, SRSO, SRTV, SRVC**	0.62
SPP	**SPNO, SPSO**	0.89
WECC	**CALI, NWGB, NWPN, ROCK, WSSW**	0.51

Figure 1 NERC Region Map



General Conversion Factors

Table 5 General Conversion Factors			
Mass			
1 pound (lb)	453.6 grams (g)	0.4536 kilograms (kg)	0.0004536 metric tons (tonne)
1 kilogram (kg)	2.205 pounds (lb)		
1 short ton (ton)	2'000 pounds (lb)	907.2 kilograms (kg)	
1 metric ton	2'205 pounds (lb)	1'000 kilograms (kg)	1.1023 short tons (tons)
Volume			
1 cubic foot (ft^3)	7.4805 gallons (gal)	0.1781 barrel (bbl)	
1 cubic foot (ft^3)	28.32 liters (L)	0.02832 cubic meters (m^3)	
1 gallon (gal)	0.0238 barrel (bbl)	3.785 liters (L)	0.003785 cubic meters (m^3)
1 barrel (bbl)	42 gallons (gal)	158.99 liters (L)	0.1589 cubic meters (m^3)
1 litre (L)	0.001 cubic meters (m^3)	0.2642 gallons (gal)	
1 cubic meter (m^3)	6.2897 barrels (bbl)	264.2 gallons (gal)	1'000 liters (L)

Energy			
1 kilowatt hour (kWh)	3412 Btu (btu)	3'600 kilojoules (KJ)	
1 megajoule (MJ)	0.001 gigajoules (GJ)		
1 gigajoule (GJ)	0.9478 million Btu (million btu)	277.8 kilowatt hours (kWh)	
1 Btu (btu)	1'055 joules (J)		
1 million Btu (million btu)	1.055 gigajoules (GJ)	293 kilowatt hours (kWh)	
1 therm (therm)	100'000 btu	0.1055 gigajoules (GJ)	29.3 kilowatt hours (kWh)
Other			
kilo	1'000		
mega	1'000'000		
giga	1'000'000'000		
tera	1'000'000'000'000		
1 psi	0.06895 bar		
1 kgf / cm ^{3} (tech atm)	0.9807 bar		
1 atmosphere (atm)	1.01325 bar	101.325 kilo pascals	14.696 pounds per square inch (psia)
1 mile (statue)	1.609 kilometers		
1 metric ton CH_4	21 metric tons CO_2 equivalent		
1metric ton N_2O	310 metric tons CO_2 equivalent		
1 metric ton carbon	3.664 metric tons CO_2		

Source: *World Resources Institute GHG Calculation Tools for Stationary Emission Sources available at:* *http://www.ghgprotocol.org/templates/GHG5/layout.asp?type=p&MenuId=OTAx*