Project Partners

Stearns County SWCD
Sauk River Watershed District
American Farmland Trust
MN River Basin Joint Powers Board
Agflex
University of Minnesota
Rural Advantage
Greater Blue Earth River Basin Alliance
Board of Soil and Water Resources
Minnesota Pollution Control Agency
MN Rural Water Farmers Union
Funding: Bush Foundation, NRCS Conservation Grant

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Ecosystem Services

- Ecosystem Services are improvements in environmental quality that benefit quality of life attributes, including:
  - Clean rivers and lakes
    - Drinking water
    - Recreation
  - Wildlife habitat
  - Income
    - Renewable fuels
    - Perennial cash crops
Markets exist where an entity will pay for an ecosystem service

- Water quality credit trading
- Carbon sequestration
- Source water protection
  - Surface intakes
  - Wellhead protection
- Cash cropping
  - Hay, other perennials
  - Manure nutrient and biomass sales
  - Renewable fuels
    - Biomass
    - Biofuels
- Habitat
  - Restoration
  - Creation
“Stacking”

• “Stacking” -- the situation where one Best Management Practice obtains multiple payments
• As an example a buffer could provide:
  – Water Quality Credit Trading for phosphorus
  – Surface source water protection for bacteria
  – Habitat
  – Carbon credits
• Not all ecosystem services allow stacking
  – e.g. Wetland banking owns all the functions and values (ecosystem services)
• Eligibility protocols defined up front to avoid conflicts
Market Incentives & Stacking

• Saves money for “Credit” buyers; by providing:
  – Treatment reductions or habitat implementation at lower costs than traditional treatment or land acquisition
  – Possibility of shared implementation
  – Marketing and transaction cost reductions from project network

• Credit generators can leverage several income sources
  – Perennial vegetation and other measures can better compete with traditional row cropping economics
  – Flexible options (public and private)

• Allows existing public program dollars to go farther

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“Credit”

A “Credit” is a:

• Defined unit that is tailored for each specific ecosystem service

• A repeatable metric (science based)
  – WQCT and Carbon trading ➔ mass per unit time of a pollutant reduction
    • Beyond identified baseline expectations
    • Adjusted for location, equivalence, uncertainties and policies
  – Habitat ➔ acre of land or water with specific features
  – Cash Crop ➔ tons of wood, hay or other commodity (not commonly called a credit)
Sauk Watershed Ecosystem Services Project

- Turnkey operation: buyers and sellers gain easy access to complex markets
- Credit estimate methods and protocols developed with buyers input and approval
- Administrative services at a reasonable price
- Expertise by local champions
- System of checks and balances
- Assurances to minimize risks
Administration Services

Pass through dollar administrative services include:

• Site selection processes (marketing, valuation, application ranking, public input)
• Implementation and O&M oversight
• Documentation
• Reporting
• Conflict resolution (and as a last resort, expert witness testimonies)

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Managing Risk

• Buyers are better informed by:
  – Experts in conservation measures
  – Assurances (reserve pools, validations, public involvement and better acceptance, safety in large transaction numbers)

• Sellers make choices based on:
  – More options to obtain quality of life and operation goals
  – A higher understanding of several complex markets
  – Technical expertise from folks they already trust

• Project team liability is minimized by:
  – Contracts kept between buyer and seller
  – Preapproved protocols ➔ stick to the protocols
  – System of checks and balances

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Progress Made To Date

- Committees with membership from multiple backgrounds (agricultural reps., districts and agencies, commissioners, environmental, cities)
  - Policy Committee
  - Aggregator Committee
  - Technical Committee
  - Credit Generator Committee
- Protocols being developed
  - Credit estimation techniques
  - Forms
  - Eligibility requirements
  - Certified Field Representative Training

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Project Materials

• Business Plan
• Protocols
• Forms
• Uncertainty Analysis
• Certified Field Representative training and certification
• Eligibility maps
• Handbooks and Bylaws
• Fact Sheets
Sauk River Ecosystem Services Project
Certified Field Representative Training

Site assessment and calculation methods, protocol instructions, forms and reporting requirements for ecosystem service programs

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Eligibility Materials

The project area is divided up into eligibility zones that allows credit calculations to consider different delivery ratios and baselines.
A Certified Field Representative (CFR) can scroll to the township containing the implementation site.
By increasing the magnitude and locating the field the CFR can select the correct sediment delivery ratio.

Legend:
- Green hash marks indicate a 17% SDR subwatershed.
- Yellow hash marks indicate a 9% SDR subwatershed.

Field
The Chicago Climate Exchange (CCX) provides a sequestration estimate map for determining the metric tons of carbon paid per acre from no-till or strip-till practices.

Similar Maps; Other Ecosystem Services
The CCX map for no-till indicates all of Stearns County is in the 0.4 metric tons/year zone, double hash marks.

Counties to the west and south are providing 0.6 metric tons/year, rotated single hash marks.

Eligibility based on year 1999 cut off to determine “new” projects status.
Site Assessments

• CFRs assess before and after conditions on project sites
• Project sites are segmented by different:
  – Flow pathways
  – Soil types
  – Soil Contents
  – Eligibility requirements
Site Segmentation

Example site map depicting a layout when first being assessed for credit estimation value (Before BMP Site)

Same site segmented into critical zones to consider flow paths, soil nutrient content and erosion rates (Before BMP site)

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Site Credit Estimation

Credit calculation workbooks estimate credit values by guiding CFRs through the required process. One site segment at a time. Before and After BMP estimates.
Request for Applications

• Applications forms are completed by CFR and landowner

• Submittals are checked for completeness and accuracy by Technical Committee

• Submittals are processed by Aggregator Committee

• Awards and Denials made by Policy Committee

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Contracting

• Selected projects can then begin contracting
  – Contracts are between buyer and seller
  – Ecosystem Service team receives a service fee

• Contracts outline roles and responsibilities
  – Money
  – Construction
  – Operation & Maintenance
  – Replacement
  – Credits
  – Timing
  – 3rd party access
  – Catastrophic events
Inspections and Validations

- CFR roles include annual or statistically sampling credited sites
- Deficiencies are handled with:
  - Clear concise identification
  - Education on needed fix
  - Reasonable correction time set
- After reasonable window if deficiencies remain site turned over to Technical committee for further inspection, documentation
- If not resolved in a reasonable manner credit revocation occurs
- Technical Committee Representative provide documents and expert witness testimony for court proceedings

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Reporting

• Reporting can be done for three audiences; depending on the ecosystem service
  1. Regulatory oversight authorities
  2. Involved parties (Buyers, Sellers and CFRs)
  3. General Public

• Validation reports include information on:
  – Site inspection results
  – CFR office document audits
  – Ecosystem Service project activities