

Comprehensive Nutrient Management Plan



Owner: _____ Business I.D.: _____ County: _____ Date: _____
 Operator: _____ Tract No. _____ Field No(s). _____
 Contract No./Revision No. : _____ Contract Item No.: _____ Field Office: _____

CNMP PLANNING

A Comprehensive Nutrient Management Plan (CNMP) must address eight of ten elements: 1) Cover Page & Signatures; 2) Background & Site Information; 3) Manure and Wastewater Handling / Storage; 4) Farmstead Safety & Security; 5) Land Treatment Conservation Practices; 6) Soil & Risk Assessment Analyses; 7) Nutrient Management; 8) Record Keeping; 9) References. The last two elements, Other Waste Utilization Options and Feed Management, must be considered when developing a CNMP but are not required. An air quality element may be an added element if it has been identified as a resource concern.

A CNMP shall address all land units that the animal feeding operation (AFO) owner and/or operator owns or has decision-making authority over and on which manure will be generated, handled, or stored on. It also addresses all land application site to which manure, biosolids or commercial fertilizer is applied on.

NRCS policy requires that technical assistance provided for conservation planning follow the guidance and processes in the NRCS National Planning Procedures Handbook (NPPH). For the purposes of providing conservation planning technical assistance, Technical Service Providers are to complete the actions required in the first seven steps of the NPPH planning process. All deliverables below are based on that requirement. For detailed guidance, planners should refer to the 180-vi-NPPH, Amend NE29, April 2011, Section II – Comprehensive Nutrient Management Planning or the appropriate section of the NRCS NPPH (CNMP Technical Guidance).

BACKGROUND CONSERVATION PLAN/CASEFILE INFORMATION NEEDED:

- Client's objectives (assistance notes)
- Client's resources using the CNMP Inventory Job Sheet (NE-CPA-73 or equivalent)
- Resource Inventory (NE-CPA-52 or equivalent) (NRCS only)
- Existing Conservation plan for the treatment unit (if available)
- Location (Maps or photos of production area and land application sites, including legal descriptions)
- Soil Survey Information (Non-Technical and other appropriate soil descriptions)
- Purpose of developing the CNMP (List all purposes that apply (CNMP must account for this/these purpose(s))

- General CNMP requirements, for more information refer to the NPPH, Amend NE29, Sec. 2, NE1-14 (http://efotg.nrcs.usda.gov/references/public/NE/Section_II_CNMP_GUIDANCE.pdf).

Use of this Form: This form will be used as a checklist for verification of CNMP deliverables. Submit this form along with appropriate documentation that deliverables as indicated for each category of technical assistance to NRCS. All documentation must be provided before work can be submitted for payment.

TSPs must attach the information listed in the above "Background Conservation Plan/Casefile Information needed" along with the applicable deliverables.

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Check the box(s) to indicate supporting practices needed to facilitate CNMP (if practice is planned, provide estimated volumes as they apply).

- | | |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> 313 Waste Storage Pond | <input type="checkbox"/> 328 Conservation Crop Rotation |
| <input type="checkbox"/> 329, 345 or 346 Tillage / Residue Management | <input type="checkbox"/> 330 Contour Farming |
| <input type="checkbox"/> 342 Critical Planting Area | <input type="checkbox"/> 350 Sediment Basin |
| <input type="checkbox"/> 360 Closure of Waste Impoundments | <input type="checkbox"/> 362 Diversion |
| <input type="checkbox"/> 380 Windbreak/Shelterbelt Establishment | <input type="checkbox"/> 386 Field Border |
| <input type="checkbox"/> 393 Filter Strip | <input type="checkbox"/> 412 Grass Waterway |
| <input type="checkbox"/> 447 Irrigation Systems, Tailwater Recovery | <input type="checkbox"/> 521 Pond Sealing or Lining (Bentonite, Compacted Clay or Flexible Membrane) |
| <input type="checkbox"/> 561 Heavy Use Production Area | <input type="checkbox"/> 600 Terrace |
| <input type="checkbox"/> 590 Nutrient Management | <input type="checkbox"/> 633 Waste Recycling |
| <input type="checkbox"/> 620 Underground Outlets | <input type="checkbox"/> 635 Waste Treatment Strips |
| <input type="checkbox"/> 634 Manure Transfer | <input type="checkbox"/> Other (specify by practice code) _____ |
| <input type="checkbox"/> 638 Water & Sediment Control Basin | |

CNMP PLANNING SCENARIOS (Check applicable scenarios)

Nutrient Management, Land Treatment, Manure Transfer, & Manure and Wastewater Handling / Storage: Applies to CNMP Planning of Nutrient Management, Manure Transfer, and Manure & Wastewater Handling / Storage for livestock operations with existing and/or proposed waste storage structures that have not completed any planning or the recorded information may not represent the existing operation (i.e. outdated due to structural or management changes). This includes the collection of resources; evaluation of nutrient management, manure storage structure, manure transfer, and land treatment; developing strategic Nutrient Management Plan (NMP), land treatment and manure storage/transfer alternative; and assembly of conservation plan and NMP. NMPs must follow 590 standards including the use of nutrient budgets, record keeping, and annual soil testing and manure analysis. **CNMP deliverables 1 through 9 must be completed.**

Nutrient Management & Land Treatment: Applies to CNMP Planning of Nutrient Management & Land Treatment for livestock operations with existing and/or proposed waste storage structures that have already done significant planning and/or design for storage facilities in the last 3-5 years. This scenario includes the need to develop or revise a NMP and complete risk assessments (Nitrogen Leaching and Phosphorus Index Risk Assessment) which determines the need for additional land treatment practices or the maintenance of existing land treatment practices. Depending on the completeness of existing information, this scenario includes the collection of resources, evaluation of nutrient management, manure and wastewater storage structure; manure transfer and land treatment; developing strategic NMP, land treatment and manure storage/transfer alternatives; and assembly of conservation plan and NMP. NMPs must follow 590 standards including the use of nutrient budgets, record keeping, and annual soil testing and manure analysis. **CNMP deliverables items 1, 2, and 4, 5, 6, 7, 8, and 9 must be completed.**

Record Keeping: Applies to record-keeping for livestock operations that have a completed CNMP in place for the existing waste storage/manure transfer measures. A thorough discussion of records required and review of existing information with the client will be completed to ensure that adequate records are being kept and proper analysis of records for the operation is completed for adjusted the CNMP as needed. NMPs must follow 590 standards including the use of nutrient budgets, record keeping, and annual soil testing and manure analysis. **CNMP deliverable 1, 2, 4, 8 and 9 must be completed. and shall be discussed with the client and maintained by the client as applicable.**

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CNMP DELIVERABLES - Provide copies/verification/documentation for each deliverable to NRCS. All information, including this SOW, must be accounted for in document form and attached. If a box is left unchecked, provide an explanation why information was not applicable or completed. The following information must be submitted in an organized format including a table of contents.

For other planned practice deliverables refer to specific Statements of Work for a practice. Refer to the NPPH NE State Supplement Section II – Comprehensive Nutrient Management Planning) or 180-VI-NPPH, Part 600.5 Comprehensive Nutrient Management Planning Technical Guidance Subpart E Comprehensive Nutrient Management Planning Technical Guidance for more information.

1. Cover & Signature Page:

- a. Name of owner/operator
- b. Facility location (physical address) and mailing address,
- c. Latitude & Longitude of the production area entrance,
- d. Type & size of animal feeding operation (AFO),
- e. Plan period, and
- f. All required signatures for acceptance of CNMP in the state.

2. Background & Site Information, including:

- a. General description of operation,
- b. Procedures for sampling, calibration, other statements, and,
- c. Natural resource concerns.

3. Manure & Wastewater Manure Handling / Storage and Manure Transfer Measures (includes other waste utilization options if applicable) that meets the requirements in NPPH NE State Supp. Section II, Part IV.A.2. or 180-VI-NPPH, Part 600.54 (a) (1) – Criteria for Manure and Wastewater Handling and Storage.

- a. Plan map or sketch of each production site (accurate scaled drawing or aerial photo)
 - i. Document existing & planned manure transfer & storage structures (including, but not limited to: confinement areas, production buildings, treatment locations, manure storage facilities, feed & raw material storage / mixing areas, clean water diversions, basins, waste treatment strips, composting facilities, animal mortality storage / composting sites, treatment lagoons, pipelines, manure application equipment/methods, pumping plants, & other manure handling measures).
- b. Existing manure storage structures
 - i. Provide dimensions, storage capacities and management for each type of manure storage structures and clean water diversions (including basins, pits, holding ponds, lagoons, etc.),
 - ii. If available, provide documentation of any existing geological investigation and site conditions,
 - iii. Provide written narrative description of the existing liner, condition and any past testing reports.
- c. Planned manure storage structures
 - i. Provide approximate location, dimensions and capacity for all planned storage and clean water diversion structures,
 - ii. If available, provide documentation of geological investigation and site conditions,
 - iii. Estimate of practice units for each practice to be installed (i.e. cubic feet, cubic yards, numbers, type, etc. based on most applicable practice scenarios) .
- d. Manure handling/transfer and application equipment
 - i. Provide a summary of available manure handling / transfer and application equipment including type, sizes/capacities, application rates, and ownership,
 - ii. Estimated time for removal of annual manure production based on existing/planned equipment:
 - 1) Number of loads for solids/slurry application,
 - 2) Number of annual operating hours for liquid/slurry application.
 - iii. Application Equipment Calibration procedures.
- e. Irrigation equipment (used to apply wastewater/effluent)
 - i. Provide summary of available irrigation equipment used for manure application including type, pump size, application rate. Provide a map of the irrigation layout with pipe size,
 - ii. Include chemigation or safety valve certifications and locations – as applicable.
- f. Animal Inventory
 - i. Provide type, number, weight (start, end, and average),
 - ii. Provide Confinement Period, days on feed, breeding/lactation cycle, etc.,

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- iii. Include Percent of manure collected (days of confinement/365 days x 100),
 - iv. List additional bedding or washwater amounts (per head per day),
 - v. Identify of respective manure storage facilities for manure, runoff, washwater), bedding generated.
 - g. Normal Mortality Plan
 - h. Manure transfers (records/receipts) as applicable
 - i. Exports – provide copies of records for dates & amounts, recipient name/address, copies of manure analysis provided.
 - ii. Imports – provide copies of records dates, amounts, manure type, originating operation/address, copies of manure analyses provided.
 - iii. Internal transfers – provide copies of records dates, amounts, manure storage ID, and destination.
 - i. Closure plan for the manure storage facilities.
- 4. **Farmstead Safety & Security** – provide procedures for
 - a. Emergency response plan,
 - b. Biosecurity plan for visitors, livestock, veterinary waste, sanitation, & employee safety,
 - b. Catastrophic mortality plan,
 - c. Chemical handling (NPDES permitted operations only).
- 5. **Land Treatment Conservation Practices** (consistent with P-index) that meets the requirements in NPPH NE State Supp. Section II, Part IV.A.1. or 180-VI-NPPH, Part 600.54 (b) (1) – Criteria for Land Treatment Practices.
 - a. Plan map for each land application sites (GIS-developed map is preferred) including soils maps and the following:
 - i. Fields shall be delineated to show setbacks, buffers, waters, conservation practices planned & existing, and other site specific features important to nutrient management planning (risers, inlets, wells, etc.).
 - ii. Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drink water sources; and
 - iii. Other site information features of significance, such as property boundaries or occupied dwellings.
 - b. Include the practice narrative and O&M requirements for each planned land treatment conservation practice.
 - c. Summary of planned management practices used for erosion control such as no-till, contouring, etc (can be summarized with P-index).
 - d. Estimate of practice units for all runoff and erosion control practices to be installed (such as waterways, terraces, grade stabilization structures, underground outlets, filter strips, other buffers, etc.) (Complete NE-CPA-77).
- 6. **Soil & Risk Assessment** - Phosphorus (P) Index & Nitrogen (N) Leaching:
 - a. Develop one or more summary tables representing risk assessments results for P & N to include the following:
 - i. Site number/name & legal description,
 - ii. P-Index risk value (numeric) and rating,
 - iii. Predominant soil type & slope,
 - iv. RUSLE2 value or NE P-Index estimator value for soil loss (T/ac),
 - v. Drainage description – length of drainage in field and distance from center of field to surface water (ft.),
 - vi. Practices for management P loss – Erosion reduction, waterways, filter strips, setback distances required,
 - vii. Soil Texture,
 - viii. N- Leaching potential for fall application, spring application pre-plant, sidedress / split application.
 - b. If any P-risk assessments result in a high or very high rating, provide a narrative statement on nutrient application plans (p-based or no manure) and if any plans are being made to incorporate land treatment or additional management practices for that land site.
 - c. Provide copies of P-Index Reports for each land application site, soil test run or management unit. Reports should be labeled properly to correspond with land unit site number and/or name.
- 7. **Nutrient Management Plan** that meets the requirements in NPPH NE State Supp. Section II, Part IV.B.1. or 180 VI NPPH Part 600.54 (c) (i) – Criteria for Nutrient Management, and Practice Standards 590 & 633; and the following:
 - a. Production area inventory (or copies of spreadsheets, i.e. UNL estimator) - Provide
 - i. Livestock type, numbers, weight (average, starting & ending), production cycle (days) or days on feed,
 - ii. Acres of Open lot drainage area, contributing drainage area, and runoff from compost/stockpile sites,
 - iii. Feedstock area runoff (acres).
 - b. Manure Inventory – Provide calculations (or copies of spreadsheets, i.e. UNL Estimator)
 - i. Manure analysis report for each manure type (should be no older than one year) – existing operations,
 - ii. Estimated annual manure, bedding and wastewater/runoff produced for all livestock,
 - iii. Total available nutrients (N & P) from manure & wastewater,
 - iv. Total available nutrients (N & P) available after losses from storage and application.

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- c. Land application site inventory
 - i. Summary table for land application sites including:
 - 1) Site number or site name & legal description,
 - 2) Land owner name, address and contact number,
 - a. If not owned by operation, include written application agreement/easement,
 - 3) Land operator, address and contact number,
 - 4) Spreadable acres (subtract setback acres), separate irrigated and non-irrigated acres,
 - 5) Setbacks required or narrative setback statement,
 - 6) Crop type & yield,
 - 7) Indication if livestock waste from another operation applied to site.
 - ii. For each site, Individual Application Site Maps or aerial site photographs, labeled with site number, legal description, acres, and scale. (Copies of FSA 578 forms (as permissible) for all land owned and rented.
 - 1) USGS topography maps for each site labeled (as indicated above).
 - 2) Non-technical description soil summary for all soils to include soil name, percent slope, soil texture.
 - 3) Indication on maps of sensitive areas including sandy areas (subject to nitrogen (N) leaching), streams, wetlands, tile inlets/outlets, etc.
 - 4) Indicate on maps any manure application setbacks from tile inlets, wells, streams, etc. and resulting spreadable acres.
 - iii. Test Reports – Provide Copies
 - 1) Soils test reports with sampling depths and maps of sampling locations for each land application site. Soil test reports must be current for N and not more than 5 years old for P; if manured, not more than one year old. Soil tests must be identified with a land application site number or name.
 - a. No or some tests were provided – producer will test in fall spring.
 - 2) Manure analysis for each type of manure and/or manure storage system.
 - a. No or some analyses were provided – producer will sample and test next application event.
 - 3) Irrigation water test results (no older than 5 years) as applicable,
 - 4) Other _____.
- d. Cropping & Fertilizer History – Provide information in summary table for one full cropping rotation (i.e. if corn-bean, provide info for each crop each year)
 - i. Crop type and actual yield,
 - ii. Crop rotation,
 - iii. Tillage Information.
 - iv. Manure & Commercial Fertilizer History
 - 1) Time,
 - 2) Form,
 - 3) Method, if broadcasting manure, days to incorporation,
 - 4) Rate (per acre),
 - 5) Current Manure Analyses for each type of storage or book value,
 - 6) Total manure and commercial fertilizer applied for N & P by site or crop type per year.
- e. Planned manure and/or commercial fertilizer application
 - i. Crop types and yield goals. Provide how yield goals were determined (i.e. crop insurance records, 5 year averages using National Ag Statistics on a County level),
 - ii. Nutrient budget procedures for determining agronomic rates for N and P,
- f. Planned Manure Application Procedures (Existing & planned for all types of manure)
 - i. Method for manure transfer equipment (numbers, size/capacity, application rates, and pump size).
 - ii. Time (fall, spring, summer, winter),
 - iii. Estimated loads and/or hours of application per season based on annual manure/wastewater production,
 - iv. Estimated application rates/amounts per acre,
 - v. Estimate of acres needed to apply manure on an N basis or P basis as generated at this site.
- g. Plan for implementing annual nutrient management plan including operation & maintenance and recordkeeping procedures necessary to adjust nutrient rates and locations on an annual basis.
- h. Applicable permits or certifications for manure and fertilizer application have been obtained.

8. Record Keeping Process and Procedures Provided To and Reviewed with Client (for each of the following items as applicable) that meets the requirements in NPPH NE State Supp. Section II, Part VII.E.3. or 180-VI-NPPH 600.54 (d) – Record Keeping.

- a. Nutrient management records in accordance with 590 standard.

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- i. Provide a narrative on Crop Nutrient Budget Procedures (Use NRCS Planning Sheet 11) & types records documenting nutrient budget procedures (i.e. N-credits, and agronomic rates for N and P)(Use NE-CPA-38).
- ii. Manure testing procedures (provide narrative) and records for each storage containment (590).
Soil sampling and testing procedures (provide narrative) and records (590),
- iii. Cropping records by field
 - 1) Crops planted and date planted,
 - 2) Crop harvested, date harvested and crop yields.
- iv. Application records for each manure type or commercial fertilizer application event including
 - 1) Source, type and form of manure and application location,
 - 2) Application method & equipment used,
 - 3) Application rate or amount applied per application site,
 - 4) Time and date of application, including weather conditions.
- v. Records documenting calibration procedures for manure application equipment.
- vi. Records documenting manure exports, imports or internal transfers, including:
 - 1) Name and address of recipient (if exporting) or originating operation (if importing), or facility ID (if internal transfer),
 - 2) Manure type, amount, transfer date and copy of manure analysis (if exported or imported).
- b. Manure Storage Facility Records
 - i. Dates of emptying, levels before & after emptying,
 - ii. Discharge/overflow events; including levels before & after event,
 - iii. Maintenance performed in accordance with operation & maintenance plans with repair dates,
 - iv. Activities associated with emergency spill response plan.
- c. Production Area Records
 - i. Daily livestock capacity records,
 - ii. Dates & numbers of any losses, disposal methods,
 - iii. Inspection of stormwater diversions & structures,
 - iv. Inspection of waterlines, including drinking and cooling water,
 - v. Deficiencies found, corrective actions, and repairs completed,
 - vi. Dates and amount of precipitation.
- d. Farm Safety & Security Records
 - i. Biosecurity: Farm visitors & Veterinary Wastes,
 - ii. Emergency Responses to Discharge Events,
 - iii. Catastrophic animal mortality (CAM) - mortality numbers, dates & disposal method.
- e. Records documenting changes to CNMP
 - i. Livestock production,
 - ii. Manure storage facility,
 - iii. Application transfer & handling equipment,
 - iv. Application rates, method, or timing,
 - v. Application sites.
- f. Records documenting applicable federal, state, and local requirements
 - i. Training,
 - ii. Reporting requirements (EPA, NDEQ, NRD, etc.),
 - iii. Other requirements - list: _____.
- 9. Provide a list of References
 - a. Publications,
 - b. Software.

COMMENTS: Use this space for installation notes or explanation of unchecked items (attach additional pages as needed):

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CERTIFICATION:

I have provided CNMP technical assistance to the client and provided CNMP deliverables to the client and NRCS for each CNMP element checked below. I certify that NRCS CNMP requirements are met and each CNMP element is consistent with all applicable federal, state and local laws and regulations.

Check each category of documentation submitted with this certification:

- Case file information (page 1)
 Cover & Signature Page Background Information Manure Transfer & Manure Handling / Storage Farm Safety & Security
 Land Treatment Soil and Risk Assessments Nutrient Management Record Keeping References

Certified by: /s/ _____ Date: _____

Title: _____ Representing: _____

SUPPORT REFERENCES

- Nebraska NRCS Electrical Field Office Technical Guide (eFOTG). Access at http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=NE.
- Nebraska State Supplement to the NPPH, Section II - Comprehensive Nutrient Management Plans. Access at http://efotg.nrcs.usda.gov/references/public/NE/Section_II_CNMP_GUIDANCE.pdf.
- Nebraska Comprehensive Nutrient Management Plan Website. Access at [CNMP - Introduction | Nebraska NRCS](#).
- 180 – National Planning Procedures Handbook (NPPH) Part 600.5 – Comprehensive Nutrient Management Planning Technical Guidance. Assess at http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600_E_5.htm.
- 180 – NPPH Part 500.53 Exhibit 15 – Comprehensive Nutrient Management Plan – Format and Contents. Access at http://policy.nrcs.usda.gov/H_180_600_F_6_x15.htm.
- Nebraska P-Index Access at [Nebraska CNMP Software](#).
- Agronomy Technical Note No. 107 – NE P-Index: Background and User Guide http://efotg.nrcs.usda.gov/references/public/NE/NEATNH_Amend17.pdf.
- Nebraska FOTG, Section IV - Conservation Practices access at http://efotg.nrcs.usda.gov/references/public/NE/NE_PDR_Index.pdf
- University of Nebraska NebGuide G1740 – Guidelines for Soil Sampling <http://www.ianrpubs.unl.edu/epublic/live/g1740/build/g1740.pdf>
- University of Nebraska NebGuide G1450 – Sampling Manure for Nutrient Analysis <http://www.ianrpubs.unl.edu/epublic/live/g1450/build/g1450.pdf>

SUPPORT FORMS

- NE-CPA-38 – Annual Nutrient Budget Job Sheet [http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-38\(Annual_nutrient_budget_jobsheet\).pdf](http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-38(Annual_nutrient_budget_jobsheet).pdf)
- NE-CPA-73 – Inventory Job Sheet for Comprehensive Nutrient Management Plans; [http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-73\(Inventory_JobSheet_for_CNMP\).pdf](http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-73(Inventory_JobSheet_for_CNMP).pdf)
- NE-CPA-74 – Nutrient Management and Waste Utilization Agreement; [http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-74\(Nutrient_Mgt_&_Waste_Utilization_Agreement\).pdf](http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-74(Nutrient_Mgt_&_Waste_Utilization_Agreement).pdf)
- NE-CPA-75 – CNMP Follow up Visit; [http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-75\(CNMP_Follow-up_Site_Visit\).pdf](http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-75(CNMP_Follow-up_Site_Visit).pdf)
- NE-CPA-76 – Conservation Plan Narrative for CNMP Land Treatment; [http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-76\(Cons_Plan_Narrative_for_CNMP_Land_Treatment\).pdf](http://efotg.nrcs.usda.gov/references/public/NE/NE-CPA-76(Cons_Plan_Narrative_for_CNMP_Land_Treatment).pdf)
- NE-CPA-77 – Quantity Estimate for Planned Practices Job Sheet file:///S:/Service_Center/NRCS/State_Office/fotg/sect4/SOW/Pending%20SOW/CNMP_SOW_12_18_07.doc

STATE CONTACT

Nebraska NRCS State Resource Conservationist
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Lincoln, NE 68508-3866
Phone 402.437.5300
<http://www.ne.nrcs.usda.gov/>