



DESIGN AND IMPLEMENTATION ACTIVITY

Comprehensive Nutrient Management Plan

DEFINITION

A site specific design and implementation activity plan developed for an Animal Feeding Operation (AFO) or user of the by-products of an AFO that includes components for both structural and non-structural conservation practices that address the planned practices for land application of manure and nutrients, and the handling, transfer, storage and treatment of animal wastes.

CRITERIA

General Requirements

A Design and Implementation Activity (DIA) is the planning and designing of a single practice or any combination of vegetative or land management practices and management activities to treat one or more resource concerns.

The DIA documents the verification of the client's CNMP CPA 102, CNMP CAP 102 or the current Conservation Plan and the development of the required CNMP documentation and implementation requirements for each planned structural and nonstructural conservation practices.

The Technical Service Provider (TSP) will complete Implementation Requirements for vegetative and land management practices as outlined in each state adopted Conservation Practice Standard (CPS) and Statement of Work (SOW) found in the NRCS Field Office Technical Guide (FOTG) for the state in which the practices are being implemented.

The TSP will maintain an ongoing record of DIA related discussions with the client. The TSP will document on a conservation assistance notes form (CPA-6) or other format that includes all components of the CPA-6 (client objectives, dates of assistance, all parties present, notes of significant information, alternatives considered, and decisions reached). Any correspondence between the TSP and the client related to the development of the DIA will be included in the record.

The TSP may use any of the Conservation Practice Documents, such as Job Sheets, templates, located in the state's Field Office Technical Guide.

The minimum requirements the planner must address in the CNMP DIA:

1. Meet the Natural Resources Conservation Service (NRCS) planning criteria on both the production and land treatment areas for water quality (nutrients, organics, and sediments in surface and ground water), soil erosion (sheet and rill, wind, ephemeral gully, classic gully, and irrigation induced), and air quality (emissions of particulate matter (PM) and PM precursors and objectionable odors).
2. Comply with Federal, Tribal, State, and local laws, regulations, and permit requirements and meet the producer's objectives.

3. Planned to assist owners/operators in taking voluntary actions to minimize potential pollutants from animal confinement facilities and the land application of manure and organic by-products.
4. Document landowner(s) decisions.
5. The DIA 101 must be developed by a TSP who meets NRCS Comprehensive Nutrient Management Plan certification requirements.
6. The nutrient management plan portion must be developed in accordance with the State Nutrient Management Practice Standard Code 590.

The CNMP CPA and CNMP DIA collectively ensure that the purposes of crop or livestock production and preservation of natural resources (especially the conservation of air quality, soil erosion, and water quality as related to nutrient related impacts) are compatible.

Technical & Specific Requirements

Planned Conservation Practices on the Farmstead

1. Include a summary and conclusion of results and analysis for the evaluation of existing waste handling/storage structures for integrity and capacity. For planned storage facilities, the TSP only needs to gather enough information about the site to indicate that it is at least “feasible” to install the planned storage facility at the location shown on the farm headquarters map. Refer to the Documentation Section for detailed instructions.
2. Include a summary and conclusion of results of the NAQSAT air quality assessment if identified in the CAP CNMP, CNMP CPA or conservation plan plus an updated report with conservation practices planned. Refer to the Documentation Section for details.
3. Inventory of livestock and manure production, storage and transport may be documented in the CNMP CPA. Confirm inventory information or develop new inventory.
4. Design and installation specifications for nonstructural conservation practices that address soil, water and air resource concerns are completed as implementation requirement sheets or job sheets in compliance with the applicable conservation practice as found in the State’s Conservation Practice General and Additional Criteria sections.
5. Farmstead planned conservation engineering practices may include practices such as Access Road 560, Composting Facility 317, Roofs and Covers 367, or Waste Storage Facility 313. The engineering plans, job sheets, or implementation requirements for future planned practices **are not required to be completed** as part the CNMP DIA but will be developed by the appropriate entity per the schedule of implementation.

Planned Conservation Practices on Crop and Pasture (Land Treatment)

1. For all planned vegetative, management, and land treatment conservation practices,

complete the installation requirements specific to each field. Site specific instructions are provided as implementation requirements or completed job sheets. Implementation design instructions are established in compliance with the applicable conservation practice as found in the State's Conservation Practice General and Additional Criteria sections. All items listed in the Plans and Specifications and Operation and Maintenance sections of each conservation practice are to be included.

2. The CNMP DIA implementation requirements for applicable conservation practices will include the anticipated change (benchmark and alternative) in risk assessment or the mitigation method to manage risk.
3. The nutrient management portion of the CNMP DIA must comply with all technical criteria contained in the State's approved Nutrient Management 590 and address the use and management of all nutrients applied on agricultural lands from any available nutrient source (animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, organic by-products, etc.). All items listed in the Plans and Specifications and Operation and Maintenance sections of Nutrient Management 590 must be included.
4. Engineering plans, job sheets, or implementation requirements for future planned practices are not required to be completed as part the CNMP DIA but will be developed by the appropriate entity per the schedule of implementation.

DELIVERABLES

1. Two copies (hardcopy or electronic) of the plan must be developed—one for the client and one for the NRCS field office. At the client's request, Technical Service Provider (TSP) can deliver NRCS's copy to the NRCS Field Office. The CNMP DIA must include all items identified herein. An additional electronic copy of the plan should also be uploaded to NRCS Registry (if using MMP, include the ".nat-cnmp.doc" and the .mmp file).

2. Cover Page

Cover page reporting the technical services provided by the TSP. Cover page(s) must include the following:

- a. Client information: Name, farm bill program, contract number, and contract item number.
- b. TSP information: name, address, phone number, email, TSP number, TSP expiration date; and county of service.
- c. Farm identification:
 - i. Farm name, owner name, street address, and county/state.
 - ii. Primary phone number of the client.
 - iii. List of all practice and/or scenario designs included in this plan.**
- d. Statement by TSP that services provided:
 - i. Comply with all applicable Federal, State, Tribal, and local laws and requirements.
 - ii. Meet applicable NRCS standards, specifications, and program requirements.
 - iii. Are consistent with the conservation program goals and objectives for which the program contract was entered into by the client.

- iv. Incorporate alternatives that are both cost effective and appropriate to address the resource issues.
- e. TSP certification statement: signature and date.
- f. Client acceptance statement:
 - i. A statement that the plans and specifications adequately represent existing conditions and the selected preliminary design alternatives, and the client understands and will abide with the operation and maintenance plans.
 - ii. Signature of the client and date the client received the plans.
- g. Block for NRCS reviewer acceptance (to be completed by NRCS).

3. Conservation Assistance Notes and Correspondence

- a. Conservation Assistance Notes (NRCS-CPA-6) or other format that includes all components of the CPA-6.
 - i. Document the client's objectives.
 - ii. Document each interaction with the client, include notes and results of that interaction, date, and initials of the TSP.
 - iii. Document each site visit, activity in the field, results of each site visit, all parties present, date, and initials of the TSP.
- b. Any correspondence between the TSP and the client relating to the development of the DIA.

4. Maps

- a. Maps developed from the CNMP CPA 102 can be used for the CNMP DIA 101 if available or include new maps to include but not limited to:
 - i. General location map of the implementation areas showing access roads to the location.
 - ii. Conservation Plan map (this may consist of several maps to account for the entire implementation area). This map may be obtained from the client.
 - iii. Other maps, as needed, with appropriate interpretations and as described in the General Requirements section.
- b. At a minimum, all maps developed for the DIA will include:
 - i. Title block showing:
 - Map title.
 - Client's name (individual or business).
 - Prepared with assistance from USDA – NRCS.
 - Assisted By [TSP planner's name].
 - Name of applicable conservation district, county, and State.
 - Date prepared.
 - ii. Map scale.
 - iii. Information needed to locate the implementation area, such as geographic coordinates, public land survey coordinates, etc.
 - iv. North arrow.
 - v. Appropriate map symbols and a map symbol legend on the map or as an attachment.

5. Documentation

- 1. All items listed in the Plans and Specifications and Operation and Maintenance

- sections of each conservation practice are to be included.
2. The TSP shall provide the following records to the NRCS office to be retained in the client case file:
 - a. Printed and electronic copy of the complete CNMP document;
 - b. CNMP electronic document file (if using MMP, include the “.nat-cnmp.doc” file);
 - c. Nutrient Management planning tool plan electronic file (if using MMP, include the “.mmp” files); all electronic files or PDF files (if electronic files are not available) used for design and nutrient management planning.
 3. Forms and worksheets used in documenting planned alternatives.
 4. Inventory and analysis information, (this would include all resource concern assessments):
 - a. Test data results from soil and manure analysis.
 - b. Erosion, N leaching index, P Index, water quality assessments, air quality site assessment, livestock inventory, manure/waste estimated production, manure imports/exports, manure storage, irrigation assessments.
 - c. Evaluation of existing waste handling/storage structures for integrity and capacity, site feasibility data if needed (such as topographic survey, soil boring or flood zone information.) Where the assistance of a licensed engineer was required for inventory, assessments, plans, etc. shall be signed by the respective licensed engineer.
 5. Current and/or planned plant production sequence or crop rotation.
 6. Planned crops and realistic yield goals for the crops.
 7. Complete nutrient budget, including both field and plan nutrient balance for nitrogen, phosphorus, and potassium for the plant production sequence or crop rotation.
 8. Odors from manure applications will be controlled. Document headquarter odor control practices (existing or planned) based on NAQSAT. Document manure application management to reduce odor risk in fields such as:
 - a. Spreading during times when neighbors may be spending time outside such as on holidays or weekends will be avoided.
 - b. Spreading during hot humid days when the air is heavy and still will be avoided as much as possible.
 - c. Surface applied manure will be incorporated immediately or at least within 48 hours of application when possible.
 - d. Time applications of manure and incorporation to minimize losses of ammonia and nitrogen.
 9. Listing and quantification of all nutrient sources, fertilizer recommendations, planned nutrient applications and form.
 10. If, applicable, photographs, audio and video files or digital files of these type of documents.
 11. Other appropriate supporting documents and local or state required documentation.
 12. Engineering Notes, if applicable.
 13. Record-keeping forms and guidance, as appropriate.
 14. Notes and computations to support all practice design documentation—for computations requiring an engineer’s license, the computations are to be signed by the respective licensed engineer.
 15. All electronic files or PDF files (if electronic files are not available) used for design

and nutrient management planning.

6. Implementation Requirements

1. Develop written Implementation Requirements for each planned (non-engineering) conservation practice, including facilitating practices.
 - a. Include, as a minimum, all items listed in each CPS “Plans and Specifications” section.
 - b. Include both visual / photographic and narrative descriptions of the work. Provide descriptive information on the quality of the work to be completed and the quantities of all materials required for completion of the work.
 - c. A location map, plan view and written information are required. These items may be included in a single document where all specification information is included on the plans, or in multiple documents where the specifications are independent of the plans.
2. Prepare an operation and maintenance plan for each design that the client will use after implementation of the practices are complete. Include, as a minimum, all items listed in each CPS “Operation and Maintenance” section.
3. Planned Storage Feasibility.
 - a. The TSP only needs to gather enough information about the site to indicate that it is at least “feasible” to install the planned storage facility at the location shown on the farm headquarters map.
 - b. At the minimum at least one subsurface test hole, pit, or boring at the proposed site showing that there is no bedrock to a depth of at least 10 feet and there is no seasonal high water table to a depth of at least 12 feet (note that the Waste Storage Facility (313) practice standard requires seasonal high water tables be at least 2 feet below the design bottom elevation for pond-type storage facilities).
 - i. Document the soil observed by describing its color and texture. It is recommended to identify the soils encountered using the unified soil classification system.
 - ii. Provide two distance measurements from one identified point so that the location of the soil boring or hole can be located by the designer at a later date. This must be documented on the site map.
 - iii. If there is a perched seasonal high water table, show evidence that there is a way to drain this water table that would allow the installation of the planned storage facility.
 - iv. Determine distance from all wells to the proposed site. Provide description of specific corrective actions to be taken if state setbacks and other requirements are not met. Use state specific worksheets as available.
 - v. Review the State’s practice standard for site limitations and separation distances. These factors must be addressed as part of the site suitability.
 - c. A subsurface investigation is needed for a planned above ground waste storage facility to ensure there is buildable soils at the planned site. Site suitability for above ground systems would include:
 - i. Conduct a soils investigation a minimum of 2 feet deep below the

- planned bottom elevation.
- ii. Document if any perched or seasonal high-water table indicators were encountered.
- iii. Provide two distance measurements from one identified point so that the location of the soil boring or hole can be located by the designer at a later date. This must be documented on the site map.
- iv. Document the soil observed by describing its color and texture. It is recommended to identify the soils encountered using the unified soil classification system.

Note: Subsurface investigations shall only be performed by qualified individuals. The CNMP DIA should not include all the subsurface investigations needed for the design of a storage facility. The TSP does not need to identify the type of liner for the storage facility unless that decision is needed to document the suitability of the site; e.g., if a flexible membrane liner is needed to meet minimum requirements, then that must be stated in the CNMP DIA.

4. Evaluation of Existing Storage Facility.

An on-site investigation shall be made to determine whether or not an existing component is in good operating condition. The thoroughness of inspection should be in proportion to the risk associated with failure of the component. If the evaluation shows the storage is not acceptable, stop here with the assessment and develop plans for taking corrective action to repair, decommission, and/or replace the storage.

- a. State whether the existing components may be included as part of a CNMP DIA only when ALL of the following are met:
 - i. The existing component is consistent with the safety guidance of the CNMP.
 - ii. An investigation/inspection of the existing component indicates it is in good operating condition, based on observable and/or measurable features and conditions.
 - iii. The failure of an existing component will not impair the structural integrity or operation of new components.
 - iv. The existing component can be managed as part of the CNMP.
 - v. State the corrective action needed to repair or replace the existing component or decommissioning. The planned date for the corrective action must be included in the Schedule of Implementation.
 - vi. The evaluation of existing component documentation needs to be signed and dated by the person or persons performing the evaluation.
- b. Provide a statement concluding if the existing components can function as part of the planned system.

REFERENCES

- USDA Natural Resources Conservation Service. National Planning Procedures Handbook.

- <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=36483.wba>
- USDA Natural Resources Conservation Service. Field Office Technical Guide.
- USDA Natural Resources Conservation Service. 2011. National Agronomy Manual. 190-V. 4th Ed.
- https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1043210.pdf
- USDA Natural Resources Conservation Service. National Environmental Compliance Handbook.
- USDA Natural Resources Conservation Service. Cultural Resources Handbook
- USDA Natural Resources Conservation Service. Title170, National Map Symbol Handbook, Part 601