National Bulletin:	450-11-1	**Date:**	October 5, 2010
Subject:	TCH - Fiscal Year 2011 Conservation Activity Plans		

Action Required By: November 1, 2010

Purpose. To update guidance for State Conservationists (STC) on Fiscal Year (FY) 2011 Environmental Quality Incentives Program (EQIP) Conservation Activity Plans (CAP) and transmit revised and new CAPs for FY 2011.

Expiration Date. September 30, 2011

Background. The EQIP CAP program was first adopted in FY 2009 on a pilot basis and was continued in FY 2010. As part of the pilot, a CAP evaluation process is in the process of being completed. The CAPs are being evaluated from a producer, Technical Service Provider (TSP), and the NRCS viewpoints. Based on preliminary feedback from producers, NRCS, and TSPs, some changes have been made to existing CAPs and some new CAPs have been developed to address the current needs. A more extensive CAP revision may occur in FY 2012 based on the full CAP evaluation which will be completed in FY 2011.

Explanation. The FY 2011 CAPs and criteria for each CAP are attached.

The key changes for FY 2011 include the following:

(1) The criteria for TSPs to complete portions of the CPA-52 have been eliminated. The entire CPA-52 for CAPs will be done by NRCS. The TSP proficiencies in TechReg will be revised to reflect this change. This should encourage more TSPs to seek certification to do CAPs and this places responsibility for the CPA-52 solely with NRCS.

(2) The Agricultural Energy Management CAP was divided into two separate CAPs. The Agricultural Energy Management Plan, Attachment G, (122) Headquarters Agricultural Energy Management Plan, is for Headquarters and the new Attachment H, (124) Landscape Agricultural Energy Management Plan, Agricultural Energy Management Plan Landscape is for the field areas. Since the TSP proficiencies were very different for each of these types of plans, it was necessary to separate Headquarters from the Landscape Energy Plans.

(3) Attachment B, (104) Nutrient Management CAP was developed for use in FY 2011.

(4) Attachment O, (150) Oil Sill, Prevention, Control and Countermeasure (SPCC) was developed for use in FY 2011 for selected pilot states.

(5) Attachment P, (154) Integrated Pest Management Herbicide Resistance Weed Conservation Plan was developed for use in FY 2011. This was developed to address major herbicide resistance problems throughout the United States, but are particularly severe in the Southeast United States.

(6) Some of the CAPs have revised criteria to be more focused on the subject of the CAP. In CAPs, where appropriate, an option was added in the "NRCS Deliverables:" If a Conservation Plug-in version is provided to NRCS, a hardcopy of the plan, conservation plan map, and soils map is not required.

States shall file the CAPs they plan to offer in Section III of the eFOTG titled "Conservation Activity Plans – Technical Criteria" not later than **November 1, 2010**.

Additional training via net meetings will be scheduled this fall to review the FY 2011 CAPs and answer questions regarding the CAPs.

Contact. If you have any questions, contact the National Agronomist at (202) 720-3783.

/s/ Noller Herbert, for

MICHELE N. LAUR
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Nutrient Management Plan Criteria
Practice/Activity Code (104) (No.)

1. **Definition**

Nutrient management plans are documents of record of how nutrients will be managed for plant production. These plans are prepared in collaboration with producer and/or landowner and are designed to help the producer with implementation and maintenance activities associated with the plan.

A Nutrient Management conservation activity plan must:

a. Meet NRCS quality criteria for soil quality, water quality and quantity, and other identified resource concerns;

b. Be developed in accordance with technical requirements of the NRCS Field Office Technical Guide (FOTG) and policy requirements of General Manual, Title 190, Part 402, Nutrient Management; and guidance contained in the National Agronomy Manual, Subpart 503C.

c. Comply with federal, state, tribal, and local laws, regulations and permit requirements; and

d. Satisfy the operator's objectives.

2. Nutrient Management Plan Technical Criteria

This section establishes the minimum criteria to be addressed in the development of Nutrient Management Plans.

A. General Criteria

The "Nutrient Management Plan" shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Nutrient Management Plans. The specific TSP criteria required for Nutrient Management Plan development is located on the TSP registry (TechReg) web site at: http://techreg.usda.gov/

B. Nutrient Management Specific Element Criteria

The Nutrient Management Plan shall include, but not be limited to, the following components:

1. Background and Site Information

- Name of owner/operator;
- Farm location and mailing address;
- Soil map units;
- Conservation plan map;
- Field names or codes;

- List of crops grown on the parcel, with acreage for each crop
- Description of the concerns related water quality, soil erosion (wind and water) or other local concerns, etc.

2. Land Treatment

Land Treatment shall address the need for and implementation of appropriate conservation practices for land treatment areas. On fields where nutrients (manure, organic by-products, and commercial fertilizer) are applied, it is essential that runoff and soil erosion be reduced to soil loss tolerance (T) levels, and that plant uptake of applied nutrients be maximized to prevent nutrients from reaching surface and/or groundwater or being volatilized to the air. Therefore, the planner must develop a conservation system that will reduce runoff and control soil erosion from the field to the level specified in Section III of the FOTG. Criteria for land treatment practices element:

(i) GIS Map(s) documenting fields and conservation practices:
- Aerial maps of land application areas including soil maps;
- Fields delineated to show setbacks, buffers, waterways, conservation practices planned or other site specific features important to nutrient management planning (risers, inlets, wells);
- Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
- Other site information features of significance, such as property boundaries or occupied dwellings.

(ii) Land treatment conservation practices planned or applied to meet the quality criteria for soil erosion, air and water quality. Include the practice narrative and the O&M requirements for each practice. Design specifications (job sheets, engineering plans) and information associated with planning and implementation of the included conservation practices shall be maintained.

(iii) To achieve the desired soil erosion, water and air quality improvements on land treatment areas, adjacent fields may also require conservation treatment.

(iv) Additional natural resource concerns may need to be addressed to meet an acceptable treatment level for erosion, water quality, and air quality, for example, managing the plant resource on pasture lands.

(v) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned land treatment activities, identified in the plan, then air quality impact mitigation is required in the nutrient plan.

3. Nutrient Management

Nutrient Management plans shall meet the technical criteria for the Nutrient Management conservation practice (code 590) standard, and address the use and management of all nutrients applied on cropland, hayland, or pastureland (animal manure, wastewater, commercial fertilizers, crop residues, legume

credits, irrigation water, organic by-products). Planners shall document the rationale when using custom recommendations in the nutrient plan.

(i) Some data necessary to develop a nutrient plan will come from chemical analyses of soils, plant tissue, manure, water, and feed. Soil test analyses shall be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program (NAPT) Proficiency Assessment Program (PAP) http://www.naptprogram.org/pap/ under the auspices of the Soil Science Society of America or State-recognized program that considers laboratory performance and proficiency to assure accuracy of test results.

(ii) Manure analyses shall be performed by laboratories successfully meeting the requirements and performance standards of the Manure Testing Laboratory Certification Program (MTLCP) http://www.mda.state.mn.us/licensing/pestfert/manurelabs.htm under the auspices of the Minnesota Department of Agriculture, or State-recognized program that considers laboratory performance and proficiency to assure accuracy of test results. States are encouraged to adopt the MTLCP or State Conservationists can establish State proficiency criteria that meet or exceed the MTLCP program criteria.

(iii) Nutrients from biosolids must be included in nutrient management planning when applied on farms for which nutrient plans are being developed. Biosolids (sewage sludge) applications are regulated by the U.S. Environmental Protection Agency (EPA) and, therefore, shall be applied in accordance with EPA regulations (40 C.F.R. Parts 403 Pretreatment and 503 Biosolids) and other State and/or local regulations regarding the use of biosolids as a nutrient source.

(iv) Criteria for nutrient plans shall include all proposed applications of manure and other needed nutrients to meet the Nutrient Management conservation practice standard (code 590). This would include all fields that may receive manure applications from any manure source. The plans and specifications shall include the following tables:

- Field information—identify field names, total acres, and spreadable acres in a table format;
- Manure application setback distances—identify setbacks for each field on the map and in a table format;
- Soil test data—soil test data for each field displayed in a table;
- Irrigation water test data (if applicable);
- Manure nutrient analysis—document most recent manure analysis in a table;
- Planned crops and fertilizer recommendations—list fields, crops, yield goals, and fertilizer recommended;
- Manure application planning calendar—display manure applications planned, when crops are grown, and restrictions that would prevent nutrient/manure applications, for example, winter spreading or high potential for nitrate leaching;

- Planned nutrient applications—the timing, rate, source(s), and methods of application by field;
- Field nutrient balance—the recommended nutrient amounts, nutrients applied, and balance after recommendation, and balance after crop removal;
- Manure inventory annual summary—annual manure production by source and storage facility; and
- Farm nutrient balance (acres planned for nutrient application) – summary of primary nutrients applied from all nutrient sources, by crop, year, and field. The net excess or shortage of nitrogen, phosphorus, and potassium shall be displayed by crop year and field.
  .

C. Associated Practice Standards

The Nutrient Management Plan shall address the resource concerns identified and the conservation practices needed to comprise a conservation system. Document the planned conservation practices, the site specific specifications for the practice, the amount to be applied, and schedule of application. Typical NRCS Conservation Practice Standards to be incorporated in a Nutrient Management Plan may include one or more of the following:

- Conservation Crop Rotation (328)
- Cover Crop (340)
- Contour Farming (330)
- Drainage Water Management (554)
- Residue and Tillage Management, No Till (329)
- Residue and Tillage Management, Mulch Till (345)
- Residue and Tillage Management, Ridge Till (346)
- Grassed Waterway (412)
- Strip Cropping (585)
- Terrace (600)
- Contour Buffer Strips (332)
- Riparian Herbaceous Cover (390)
- Riparian Forest Buffer (391)
- Filter Strip (393)
- Vegetative Barriers (601)
- Vegetative Treatment Area (635)
- Constructed Wetland (656)

- Wetland Restoration (657)
- Wetland Creation (658)
- Wetland Enhancement (659)
- Denitrifying Bioreactor (747)
- Forage Harvest Management (511)
- Diversion (362)
- Field Border (386)
- Grade Stabilization Structure (410)
- Tailwater Recovery (447)
- Structure for Water Control (587)
- Waste Utilization (633)
- Water and Sediment Control Basis (638)

D. References

- USDA Natural Resource Conservation Service National Agronomy Manual, Parts 507 and 503C.
- General Manual, Title 190, Part 402, Nutrient Management

1. Deliverables for the Client – a hardcopy of the plan that includes:

- Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions
- Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
- For management practices. The planned practices and the site specific specifications on how each practice will be applied; when the practice will be applied, and the extent (acres or number) that will be applied.
- For engineering/structural practices. The planned practice when it will be applied and extent, and located on the conservation plan map.
- The following nutrient management conservation practice (code 590) requirements:

  -- Field information;
  -- Manure application setback distances;
  -- Soil test data;
  -- Manure nutrient analyses;
  -- Planned crops and fertilizer recommendations;

-- Manure application planning calendar;
-- Planned nutrient applications;
-- Field nutrient balance;
-- Manure inventory annual summary;
-- Fertilizer material annual summary; and
-- Farm nutrient balance.

2. Deliverables for NRCS Field Office:

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy).
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.

Headquarters Agricultural Energy Management Plan Criteria
Practice/Activity Code (122) (No.)

1. Definition

A Headquarters Agricultural Energy Management Plan (Headquarters AgEMP) contains the strategy by which the producer will explore and address his/her on-farm energy problems and opportunities.

2. Headquarters AgEMP Criteria:

This section establishes the minimum criteria to be addressed in the development of AgEMP.

A. General Criteria

1. A Headquarters AgEMP shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentives Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of a Headquarters AgEMPs. The specific TSP criteria required for the Headquarters AgEMP development is located on the TSP registry (TechReg) web site at: http://techreg.usda.gov/

B. The Headquarters AgEMP plan shall address and document the following elements:

1. Background and site information;
2. Energy audit for the Headquarters' Operation
3. Energy conservation practices planned;
4. Reference documents.

C. Headquarters AgEMP Element Specific Criteria

1. The Headquarters AgEMP will address specific elements. The Headquarters Audit will meet the Type 2 Audit minimum criteria established in the *ANSI/ASABE S612 July2009 Performing On-farm Energy Audits* standard. The degree to which these elements are addressed in the development and implementation of a site-specific Headquarters AgEMP is determined by the General Criteria in Section A and the specific criteria provided for each element of the Headquarters AgEMP are identified below.
2. Background and Site Information - This element provides a brief description of:
   a. Name of producer
   b. Facility location(s) and mailing address
   c. Type and size of the operation
   d. Producer concerns
3. On-farm Energy Audit: This element determines and documents current energy usage, over the past annual cycle, and provides cost-effective alternatives and

recommendations for energy conservation of each farm enterprise. The evaluation of energy conservation activities shall include energy used in the processing and storage of agricultural crops, feeding, housing, and processing of farm animals and animal products.

4. Definitions:

   a. Energy: Fuels (purchased propane, diesel and natural gas) and electricity used to perform stationary farm and ranch activities. This definition includes renewable energy sources.

   b. Energy Auditor: A person who has the technical qualifications to perform an agricultural energy audit.

   c. Energy Source: The type of fuel (liquid or gas), electricity or renewable power used to perform farm and ranch activities.

   d. Current Energy Usage: The annual usage of grid electricity and/or natural gas and purchased fuels (liquid or gas) for stationary farm or ranch operations.

5. Criteria for Headquarters Energy Audit - The Energy Audit is to be tailored to the individual farm and should cover the primary energy users such as irrigation pumping, heating and cooling of livestock production facilities, manure collection and transfer, grain drying and similar common on-farm activities.
   a. Current energy usage – describe activity and primary equipment involved with each headquarters operation.
   b. Recommended energy improvements and estimated cost.
   c. Expected energy savings from these improvements and estimated payback period in years.
   d. Document the type of energy resource used and current energy consumption by each major activity at the farm headquarters.
   e. Describe components of the major activities:
      - Manufacturer
      - Equipment component factory ratings (HP, efficiency, BTU use)
      - Management use efficiencies (ex. manual/automatic controls)
      - Estimated annual energy use
   f. Summary of energy use by energy resource
   g. Assessment - Alternatives Development
   h. Describe the planned energy saving actions
   i. Document energy savings for the major activities at the farm headquarters as BTU's, KW hours, etc. Document a simple payback period (in years) for the proposed changes.

7. Conservation plan (record of decisions) *(Utilizing Customer Service Toolkit – Plug-In or MsWord Document)* conservation practices and measures taken to reduce energy to address the energy management needs for the "Headquarters

AgEMP". The record of decisions shall include the measures taken to reduce energy consumption, planned practice, schedule for implementation, and site specific specifications to apply the conservation practice. The site specific specifications can be on an NRCS Jobsheet available for the conservation practice or in a narrative form for the non-engineering type practices. Planned engineering type practices shall include the conservation practice and schedule of implementation. The plan may include, but is not limited to the conservation practices listed below and measures taken to reduce energy consumption:

(a) Anaerobic Digester (366)

(b) Composting Facility (317)

(c) Irrigation System, Microirrigation (441)

(d) Irrigation System, Sprinkler (442)

(e) Irrigation Water Management (449)

(f) Pipeline (516)

(g) Pumping Plant (533)

(h) Solid/Liquid Waste Separation Facility (632)

(i) Waste Transfer (634)

(j) Watering Facility (614)

8. References: This element lists the technical documentation sources used for the Headquarters AgEMP and may include the actual documents or web sites that contain the technical documentation useful for the producer.

9. **Deliverables for the Client – a hardcopy of the plan that includes:**
   - Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
   - The completed energy audit report will include the following sections:
     a. Summary of the facility's location, production level, any unusual factors that affect energy use, and any energy efficiency measures already in use.
     b. Summary of the site's energy use over one year, broken down by type of usage and month.
     c. Summary of how much money the producer would save if the recommended measures were included, and how much money the producer would lose if no action were taken.
     d. A list of recommended measures to reduce energy use including their annual energy (kWh, propane, fuel oil, BTU,…) savings and an estimated payback in years.

e. A narrative summary of the recommendations made through the audit including description of technology, how the technology would affect the site, and how much energy would be saved annually by installing the equipment.

- For engineering/structural practices. The planned practice when it will be applied and extent, and located on the conservation plan map.

2. Deliverables for NRCS Field Office:

- Complete Hardcopy and Electronic copy of the producer's plan (MsWord copy).

Landscape Agricultural Energy Management Plan Criteria
Practice/Activity Code (124) (No.)

1. Definition

A Landscape Agricultural Energy Management Plan (Landscape AgEMP) contains the strategy by which the producer will explore and address his/her on-farm energy problems and opportunities on the working land.

2. Landscape AgEMP Criteria:

This section establishes the minimum criteria to be addressed in the development of AgEMP.

A. General Criteria

A Landscape AgEMP shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of a Landscape AgEMP. The specific TSP criteria required for Landscape AgEMP development is located on the TSP registry (TechReg) web site at: http://techreg.usda.gov/

B. The Landscape AgEMP plan shall address and document the following elements:

1. Background and site information;
2. Energy audit for Landscape (Working Lands);
3. Energy conservation practices planned;
4. Reference documents.

C. Landscape AgEMP Element Specific Criteria

1. Each of the Landscape AgEMP elements will address specific criteria for working land elements. The degree to which these elements are addressed in the development and implementation of a site-specific AgEMP is determined by the use of working lands and the producer objectives. The specific criteria provided for each element of the AgEMP identified below.
2. Background and Site Information - This element provides:
    a. Name of producer
    b. Facility location(s) and mailing address
    c. Type and size of the operation
    d. Brief description of producer concerns
3. On-farm Landscape Energy Audit: This element determines and documents current energy usage, over the past annual cycle, and provides cost-effective alternatives and recommendations for energy conservation. The evaluation of

energy conservation activities shall include energy used in the cultivation, protection, and harvesting of agricultural crops.

4. Definitions:

   a. Energy: Fuels (purchased propane, diesel and natural gas) and electricity used to perform stationary farm and ranch activities. This definition includes renewable energy sources.

   b. Energy Management: Optimization of energy use on farms and ranches to minimize non-renewable energy consumption.

   c. Certified Energy Auditor: A person who has the technical qualifications to perform an agricultural energy audit.

   d. Energy Source: The type of fuel (liquid or gas), electricity, or renewable power used to perform farm and ranch activities.

5. NRCS Landscape (cropland, pastureland, forestland, etc.) AgEMP is an energy audit that is designed to (a) estimate energy use associated with current farming/ranching operations and (b) identify energy savings associated with alternative management activities. The Landscape AgEMP shall address energy use for the following elements (as applicable):

   a. Cropland field equipment operations - estimate energy use associated with the current field equipment operations (Compare in common units):

      - Field equipment operations
      - Embedded energy in synthetic nitrogen used
      - Irrigation
      - Pasture management
      - Forest operations

   b. Specific Criteria: The Audit will address specific criteria for each element as identified below:

      1) Cropland field equipment operations - Estimate energy use associated with current field equipment operations:

         - Tillage
         - Planting
         - Harvesting
         - Manure application
         - Application of inorganic soil amendments and pesticides

      2) Identify potential energy savings associated with alternative activities. As a minimum the analysis will address the following, as appropriate. Each item will be expressed in comparison to the existing situation with total savings expressed in common units:

- Number and type of field operations
- Trips to the field
- Trips across the field
- Precision farming practices
- Equipment maintenance and calibration
- Size of tractor relative to implement

3) Embedded energy in synthetic fertilizer, especially nitrogen. Estimate indirect energy use associated with synthetic fertilizer used in the operation. Identify potential indirect energy savings associated with alternative management activities. Analysis may include, for example:
   - Presence of a professionally developed nutrient management plan that reduces the amount of fertilizers applied and minimizes losses.
   - Potential adjustments to crop rotations such that the amount of nutrients is reduced by optimizing residual nutrient supplies to subsequent crop.
   - Precision application techniques that minimize agrichemical needs and optimize the effectiveness of the chemicals used.
4) Irrigation: Estimate energy used in current irrigation system and identify energy savings associated with alternative equipment and management activities. Analysis may include, for example:
   - System type
   - System pressure
   - Irrigation water management techniques
   - Pumping plant evaluation
   - System maintenance
5) Pasture management: Estimate direct energy used in pasture management for example watering facilities and pasture maintenance/renovation and identify energy savings associated with alternative management and equipment. Examples include:
   - Impact of grazing management on reseeding requirements
   - Hauling distance for water/feed vs. water facility development
   - Other
6) Forest operations: Estimate current energy use associated with the forest management/harvest system and identifies energy savings associated with alternative management and equipment. Analysis might include (but not be limited to):
   - Forest trails and landings

- Types of equipment used
- Identify potential energy savings in other land uses associated with windbreaks/shelterbelts
- Other

7. Conservation plan (record of decisions) *(Utilizing Customer Service Toolkit – Plug-In or MsWord Document)* conservation practices to address the energy management needs for the "Landscape AgEMP". The record of decisions shall include the planned practice, schedule for implementation, and site specific specifications to apply the conservation practice. The site specific specifications can be on an NRCS Jobsheet available for the conservation practice or in a narrative form for the non-engineering type practices. Planned engineering type practices shall include the conservation practice, schedule of implementation, and identified on the plan map. The plan may include, but are not limited to the conservation practices listed below:

   (a) Brush Management (314)

   (b) Conservation Crop Rotation (328)

   (c) Cover Crop (340)

   (d) Conservation Cover (327)

   (e) Fence (382)

   (f) Herbaceous Weed Control (315)

   (g) Irrigation System, Microirrigation (441)

   (h) Irrigation Water Management (449)

   (i) Land Smoothing (466)

   (j) Mulching (484)

   (k) Nutrient Management (590)

   (l) Pasture and Hayland Planting (512)

   (m) Pesticide Risk Mitigation (596)

   (n) Pipeline (516)

   (o) Prescribed Grazing (528)

   (p) Residue and Tillage Management, Mulch Till (345)

   (q) Residue Management, No Till/Strip Till/Direct Seed (329)

   (r) Residue Management, Ridge Till (346)

   (s) Residue Management, Seasonal (344)

   (t) Stripcropping (585)

   (u) Terrace (600)

(v) Watering Facility (614)

(w) Windbreak/Shelter Belt Establishment (380)

8. References: This element lists the technical documentation sources used for the AgEMP and may include the actual documents or web sites that contain the technical documentation useful for the producer.

9. **Deliverables for the Client – a hardcopy of the plan that includes:**
   - Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
   - Soils map and appropriate land use soil descriptions
   - The completed energy audit report will include the following sections:
     a. Summary of how much money the producer would save if the recommended measures were included, and how much money the producer would lose if no action were taken.
     b. A list of recommended measures to reduce energy use including their annual energy (kWh, propane, fuel oil, BTU,…) savings and an estimated payback in years.
     c. A narrative summary of the recommendations made through the audit including description of technology, how the technology would affect the site, and how much energy would be saved annually.
   - Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
   - For management practices. The planned practices and the site specific specifications on how each practice will be applied; when the practice will be applied, and the extent (acres or number) that will be applied.
   - For engineering/structural practices. The planned practice when it will be applied and extent, and located on the conservation plan map.

10. **Deliverables for NRCS Field Office:**
    - Complete Hardcopy and Electronic copy of the client's plan (MsWord copy). **Optional**: If a Conservation Plug-in version is provided to NRCS a Hardcopy of the plan, conservation plan map and soils map is not required.
    - Digital Conservation Plan Map with fields, features, and structural practices located.
    - Digital Soils Map.

Tools Needed

One or more tools are needed to evaluate energy associated with tillage, agrichemicals, irrigation, pasture management, and forest operations. Some tools already exist or can be made functional with minimal effort. Others will need to be developed.

Tools Available to Support the Landscape Audit

Audit Element	Tools Available or needed	Tool output	Already existing?
Field Equipment Operation	• RUSLE2 • Cropland Energy Estimator (CLE). • Size of tractor relative to implement(s) used	• Fuel or BTU use per acre • Table to identify ideal tractor size for specific implements based on ASABE equipment standard	• Yes (RUSLE2, WEPS and CLE) • No
Embedded Energy in Agrichemicals	• CLE • CLE upgrade	Embedded energy in agrichemicals applied. (Current tool does not automatically adjust for management changes)	• Yes • Upgrade needed)
Irrigation	• Energy Self-Assessment • CLE Upgrade	Fuel or Btu use per acre	• Yes • Upgrade needed

*CLE = Cropland Energy Estimator

Spill Prevention, Control, and Countermeasure Conservation Activity Plan Criteria Code (150) (No.)

1) Definition

An Oil Spill Prevention, Control, and Countermeasure (SPCC) conservation activity plan (CAP) is a plan prepared and certified by a registered Professional Engineer (PE) in accordance with the U.S. Environmental Protection Agency (EPA) rules for producers with more than 10,000 gallons of liquid storage capacity. Producers with less than 10,000 gallons of liquid oil/fuel storage capacity are not required to hire a registered PE to prepare their plan, and may self-certify. See EPA website for more information: http://www.epa.gov/emergencies/content/spcc/index.htm

2) SPCC Criteria:

This section establishes the minimum criteria to be addressed in the development of an SPCC CAP.

A) General Criteria

1) An SPCC CAP shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentives Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of an SPCC CAP. Specific TSP criteria required for the SPCC CAP development is located on the TSP registry (TechReg) web site at: http://techreg.usda.gov/

B) The SPCC CAP shall address and document the following elements:

1) Background and site information;

2) Existing inventory of liquid storage tanks and containers

3) Secondary containment conservation practices planned;

4) Reference documents.

C) SPCC Element Specific Criteria

1) The SPCC CAP is applicable to farms with liquid storage capacities greater than 10,000 gallons of regulated substances in above ground containers as defined by EPA SPCC Tier 2 rule. The degree to which these elements are addressed in the development and implementation of a site-specific SPCC CAP is determined by the General Criteria in Section A and the specific criteria provided for each element of the SPCC are identified below.

2) Background and Site Information - This element provides a brief description of:

   a. Name of producer
   b. Facility location(s) and mailing address
   c. Type and size of the operation
   d. Producer concerns

3) Criteria for SPCC CAP - The SPCC plan is to be tailored to the individual farm and should cover the required elements including, but not limited to, the following:

   a. Professional Engineer certification
   b. Plan must comply with the provisions of 40 CFR 112
   c. Facility diagram
   d. Type of oil capacity of each container
   e. Oil spill predictions
   f. Facility drainage
   g. Facility inspection
   h. Site security
   i. Five year review plan
   j. Management approval
   k. Appropriate secondary containment
   l. Loading/unloading requirements and procedures for tank car and tank trucks
   m. Brittle fracture evaluations
   n. Bulk storage container compliance
   o. Transfer procedures and equipment (including piping)
   p. Integrity testing
   q. Personnel training and oil discharge prevention briefing

4) SPCC CAP (record of decisions) *(Utilizing Customer Service Toolkit – Plug-In or MsWord Document)* conservation practices and measures taken to address meeting EPA regulation. The record of decisions shall include the measures taken to provide secondary containment for regulated substances, planned practices, schedule for implementation, and site specific specifications to apply the conservation practices. Planned engineering type practices shall include the conservation practice list and schedule of implementation.
5) References: This element lists the technical documentation sources used for the SPCC CAP and may include the actual documents or web sites that contain the technical documentation useful for the producer.

3) Deliverables for the Client – a hardcopy of the plan that includes:

A. Cover page – name, address, phone of client and TSP; Total storage capacities of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.

B. The completed SPCC CAP will include the following sections:

(i) Summary of the facility's location, storage tanks and containment types and volumes, and any containment measures already in use. Additionally, this will be located on a map of the facilities.

(ii) A list of recommended measures required to meet regulation and cost estimates.

(iii) A narrative summary of the recommendations made through the SPCC plan including description of containment facilities.

(iv) For engineering/structural practices. The planned practice(s) when it will be applied and extent, and located on the plan map.

4) Deliverables for NRCS Field Office:

A) Complete Hardcopy and Electronic copy of the producer's CAP (MsWord copy).

Integrated Pest Management Herbicide Resistance Weed Conservation Plan

Criteria Practice/Activity Code (154)

1. Definition:

Integrated Pest Management Herbicide Resistance Weed Conservation Plan is ecosystem-base, with an emphasis to modify herbicide use for suppressing weeds on cropland by utilizing four IPM strategies Prevention, Avoidance, Monitoring and Suppression that will be implemented with the augmentation of three key essential conservation practices Crop Rotations, Cover Crops, Residue Tillage Management, and IPM techniques especially Monitoring/Scouting, with the judicious use of herbicides.

- To change herbicide rotation (modes of action and herbicide) and intensify mechanical practices initially as well as some manual labor may be needed where farms are presently populated with herbicide resistance weeds;
- To change herbicide rotation (modes of action and herbicide) and increase the use of conservation practices along with IPM techniques that prevent early term resistance weeds on farms;
- Minimize resistance weeds seed production by reducing the weed populations before the flowering stage or before maturity;
- To manage the weeds seed bank with a healthy soil (cover crops) which improve soil biological activity and shorten the half-life of the weed seed bank at the same time having a desirable habitat for seed predators (invertebrates, small rodents, birds) that consume weed seed.
- Manages resistance weeds economically;
- Addresses operator's objectives;
- Meets NRCS quality criteria for soil, water, air and plant quality;
- Complies with federal, state, tribal, and local laws, regulation and permit requirements;

2. IPM Herbicide Resistance Weed Conservation Plan Criteria

This section establishes the minimum criteria to be addressed in the development and implementation of IPM Herbicide Resistance Weed Conservation Plan on cropland

A. General Criteria

1. An IPM Herbicide Resistance Weed Conservation Plan shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of IPM Herbicide Resistance Weed Plan. The specific TSP criteria required for IPM Herbicide Resistance Weed Plan development is located on the TSP registry (TechReg) web site at: http://techreg.usda.gov/

B. The planner shall address the following items during the IPM Herbicide Resistance Weed Conservation Plan development process:

1) Background and site information
2) Site specific assessment of environmental risk associated with existing and alternative weed suppression system
3) Monitoring guidelines
4) Consult with Weed Society of America; http://www.hracglobal.com and State University's IPM guidelines for specific crops (optional)
5) Record Keeping
6) Herbicide Resistance Weed Plan (record of decisions) to address the identified environmental risks associated with weed suppression activities with implementation specification and other resource concerns.
7) References, if needed.

C. IPM Herbicide Resistance Weed Plan Specific Element Criteria

Each of the IPM Herbicide Resistance Weed Plan elements will address the specific below. The degree to which these criteria are addressed in the development of a site-specific IPM Herbicide Resistance Weed Plan is determined by the General Criteria and the specific criteria provided for each element of the IPM Herbicide Resistance Weed Plan below.

1) **Background and Site Information.** This element provides a brief description of:
   a) Name of owner/operator;
   b) Tract and field(s) location;
   c) Soil map units;
   d) Resource concerns;
   e) Present site use and general management being applied;
   f) History of weed management activities.

2) **Site Specific Assessment of Environmental Risks Associated with Existing and Alternative Weed Management System.** This element provides a brief description and maps including:

a) Conservation Plan Map;
b) Field Locations of planned areas;
c) Soil type and characteristics; not potential for runoff or permeability
d) Site conditions risk description;
e) Identification of weeds, crop, plant community condition and degree of infestation;
f) Irrigation system and management (where appropriate);
g) Locations of sensitive resource areas identified on the plan map to include:
h) Streams, drains, surface water, wetlands, wells, groundwater, drains, grassed waterways and existing buffer practices;
i) Sensitive wildlife habitat (on and off-site), food plots;
j) Potential off-target drift areas;
k) Consideration for pollinator habitat and pollinator protection;
l) Other risk mitigation practices in use.

3. **IPM key essential technique of an IPM Herbicide Resistance Weed Conservation Plan Monitoring/Scouting.** This element addresses scouting strategies that addresses weeds population levels, minimizing weeds maturity and the reduction of seed production. The scouting report should include:
   a) List of crops to be maintained;

b) Thresholds which may be a goal of zero base on the tolerant level for the specific weed and monitoring frequency;
c) Scouting for weeds population levels with dates and results;
d) Soil test results;
e) Weather forecasting;

Scouting frequency during cropping season for herbicide resistance weeds will require a high frequency due to grow intensity. After harvesting the frequency of scouting may be reduce. After harvesting the main concern of managing weeds, do not allow them to mature (produce seeds). See scouting frequency chart below for sustainability in suppressing herbicide resistance weeds populations.

Scouting

Effectiveness	**Frequency**
Good	1-2 days
Declining	3-4 days
Poor	≥ 5 days

4. Three key essential conservation practices of an IPM Herbicide Resistance Weed Conservation Plan.

a) *Conservation Crop Rotation* (328) is the initial building block of an IPM Herbicide Resistance Weed Plan. It provides crop diversity, improve soil quality and impact plant community by lessen the condition for the invasion of weeds. See below the conservation crop rotation chart below for effectiveness.

Conservation Crop Rotation

Effectiveness	**Duration**
Good	≥ 3 yrs
Declining	< 3 yrs
Poor	< 2 yrs

b) *Cover Crop* (340) practice is a supporting building block of an Herbicide Resistance Weed Plan. For this plan it will be use in combination with conservation crop rotation to assist in the suppression of weeds. However cover crops are essential for soil quality and crop production. Cover crops can be terminated effectively by harvest, frost, mowing, tillage, crimping and/or herbicides in preparation for the following crop, simultaneously suppressing weeds. An effective use of cover crops for herbicide resistance weeds is to alternate each seasonal cover crops species with different species; warm season cover crop species and cool season cover crop species.

c) *Residue Tillage Management* is another supporting building block of the plan to suppress weeds. These particular conservation practices are applied in various ways as to the use of not making the site desirable for weeds growth that includes; Mulching (484), Residue Management Seasonal (344), Residue and Tillage Management Ridge Till (346), Residue and Tillage Management No Till/Strip Till/Direct seed, and Residue and Tillage Management Mulch Till (345). Residue content assessment is site specific as well as generalized area where the content requirements require heavy coverage to address the condition properly.

d) *Herbicide use* is last building box of planning tactical sequence for an IPM Herbicide Resistance weed plan. It should be noted that herbicides are not the do all for weed suppression. The use of herbicides need to be judicious; proper application rate, proper timing, proper weather conditions, rotate different herbicides annually, and change mode of action regularly. Make use of extension recommendations and followed label warnings and instructions. See chart below for herbicide rotation effectiveness

Herbicide Rotation Frequency

Effectiveness	Rotation modes of action	Rotation of herbicide
Good	3-4 applications	1 year
Declining	5-6 applications	1-2 years
Poor	> 6 applications	≥ 2 years

5. **Window Pesticide Screening Tool (WIN-PST)** is NRCS supported tool that is used to assess relative pesticide leaching, solution runoff, and adsorbed runoff risks to water quality. WIN-PST analysis is based on:
   - Soil properties
   - Pesticide physical properties
   - Pesticide toxicity data

   The major components of the NRCS no-point source water quality pesticide risk analysis are:

   1) The potential for pesticide loss in
   - water that percolates below the root zone;
   - water that runs off the edge of the field;
   - sediment that leaves the field in run off;

   2) Chronic (long term) pesticide toxicity to human drinking water and aquatic habitat;

   3) And the combination of pesticide loss potential with pesticide toxicity to provide site specific ratings for pesticide hazard in leaching, solution runoff, and sediment adsorbed runoff.

6. **Recordkeeping.** This element addresses list of records that shall be maintained detailing:
   a) Date of monitoring;
   b) Results of monitoring;
   c) Identification of crop and/or plant community condition;
   d) Threshold of infestation or tolerant level for each specific weed
   e) Tactics implemented with dates
   f) All required records required by state and federal requirements;
   g) Records required or needed as part of the State University IPM guidelines being used.

7. **Conservation Plan** (record of decisions) *Utilizing Customer Service Toolkit – Plug-In or MsWord Document)* to address the identified environmental risks associated with weed suppression activities with implementation specifications and other resource concerns.

The record of decisions shall include the planned practice(s), schedule for implementation, and site specific specifications to apply the conservation practice. The site specific specifications for the non-engineering type practices can be on an NRCS Job sheet available for the conservation practice or in a narrative form in a document. Planned engineering type practices shall include the conservation practice, schedule of implementation, and identified on the plan map. The plan may include, but not limited to the conservation practices listed below:

a) Brush Management (314)
b) Conservation Crop Rotation (328)
c) Cover Crop (340)
d) Conservation Cover (327)
e) Early Successional Habitat Development/Management (647)
f) Filter Border (386)
g) Hedgerow Planting (422)
h) Irrigation System, Microirrigation (441)
i) Irrigation Water Management (449)
j) Land Smoothing (466)
k) Mulching (484)
l) Nutrient Management (590)
m) Pasture and Hayland Planting (512)
n) Prescribed Grazing (28)
o) Residue and Tillage Management, Mulch Till (345)
p) Residue Management, No Till/Strip Till/Direct Seed (329)
q) Residue Management, Ridge Till (346)
r) Residue Management, Seasonal (344)
s) Stripcropping (585)
t) Terrace (600)
u) Upland Wildlife Habitat Management (645)
v) Windbreak/shelter Belt Establishment (380)

8. References: USDA NRCS Field Office Technical Guide

9. **Deliverables for the Client – hardcopy of the plan that includes:**
    - Cover page – name, address, phone of client and TSP; Total Acres of the plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
    - Soils map and appropriate soil descriptions
    - Resource assessment result (wind and water erosion, water availability, soil fertility, and other that may be needed)
    - For management practices. The planned practices and the site specific specifications on how each practice will be applied; when the practice specifications on how each practice will be applied; when the practice will be applied, and the extent (acres or number) that will be applied.
    - For engineering/structural practices. The planned practice when it will be applied and extent, and located on the conservation plan map.
10. **Deliverables for NRCS Field Office:**
    - Complete Hardcopy and Electronic copy of the client's plan (MsWord copy).
    - Digital Conservation Plan Map with fields, features, and structural practices located.
    - Digital Soil Map