

Part 401 - Technical Guides

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Subpart A - Policy and Responsibilities

401.0 General.

- (a) This Part states policy for establishing, changing and maintaining Field Office Technical Guides and supporting committees.
- (b) The Natural Resources Conservation Service (NRCS) is responsible for providing national leadership and administration of programs to conserve soil, water, and related resources on the nonfederal lands of the Nation, including private, and American Indian Tribal lands. NRCS is also involved in the coordinated management of resources on intermingled private, State, American Indian Tribal, and Federal lands. A primary goal is to provide technical assistance to decision-makers for the planning and implementation of a system of conservation practices and management that achieves a level of natural resources protection that prevents degradation and permits sustainable use. In cases where degradation has already occurred, the goal is to restore the resource to the degree practical to permit sustainable use.
- (c) Technical guides are primary technical references for NRCS. They contain technical information about the conservation of soil, water, air, plant, and animal resources. Technical guides used in any office are to be localized so that they apply specifically to an identified geographic area. These documents are referred to as Field Office Technical Guides (FOTG's).
- (d) Field Office Technical Guides will be maintained in each NRCS field office as a compilation of technical knowledge and standards. The FOTG will be comprised of 5 sections, the contents of which are defined later in this subpart. The FOTG contents may be kept in three-ring binders with suitable indexing and/or electronically stored. The FOTG is to be kept in a format that will allow easy access and reproduction as necessary.
- (e) The following guidance is given regarding supporting documentation for technical information contained in the FOTG:
- (1) Section I -- No documentation will be needed for references contained in Section I;
 - (2) Section II --Sources of data and information will be included;
 - (3) Section III -- NRCS will be cited as the source for information contained, unless it is otherwise provided. In those cases, the source will be included;
 - (4) Section IV -- Citations of technical materials used to prepare State practice standards and specifications will be included with each numbered standard, as needed; and
 - (5) Section V -- NRCS will be cited as the source for effects information, unless supplemented or refined to relate to State or local laws and criteria. In those cases, the source of those laws and criteria will be cited.

401.1 Responsibilities.

- (a) Staff in the National Headquarters Office.
 - (1) The Deputy Chiefs for Science and Technology and for Soil Science and Resource Assessment have joint national leadership for policy and procedures for developing and using the FOTG.
 - (2) The Director, Ecological Sciences Division, serves as Chairperson of the National Technical Guide Committee.
 - (3) The National Technical Guide Committee makes recommendations regarding technical guide policy and procedures to appropriate Deputy Chiefs and reviews and approves all nationally issued FOTG materials.
- (b) Staff at the Regional Office.
 - (1) The Regional Conservationists will:
 - (i) Ensure, through the Regional Technology Specialists, that State Conservationists coordinate FOTG contents with adjoining States, i.e., across major land resource area boundaries and regions, as necessary; and
 - (ii) Submit State FOTG/technology concerns and recommendations to the NTGC Executive Secretary—appointed by the Committee Chairperson.
 - (2) The Regional Technology Specialists will:
 - (i) Convene the Regional Technology Workgroups, as needed, to address FOTG/technology concerns; and
 - (ii) Submit the Regional Technology Workgroups' recommendations to the Regional Leadership Teams for concurrence.
- (c) State Conservationists and Directors of the Pacific Basin and Caribbean Areas.
 - (1) Are responsible for the development, quality, coordination, use, and maintenance of FOTG's in his/her State and coordination across State, regional, and major land resource area boundaries;
 - (2) Will participate in the development and maintenance of the National Handbook of Conservation Practices;
 - (3) Will coordinate FOTG contents to achieve reasonable uniformity between and among States where major land resource areas are shared across State lines. Special Hydrologic Unit Areas or other "common resource areas" should also be considered for multi-state coordination, e.g., Lake Champlain or the Chesapeake Bay;
 - (4) Will coordinate FOTG contents across State lines where program criteria require reasonable uniformity between and among States;
 - (5) Will approve all State interim standards, request interim practice standard code numbers from the National Conservation Practice Standards Subcommittee (NCPSS), and provide interim practice evaluations to the NCPSS (see §401, Subpart B for more information on interim standards);

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- (6) Will establish and appoint membership to a State Technical Guide Committee (STGC) to assist in creation and maintenance of the FOTG. The STGC is responsible for the approval and distribution of State-developed, State-supplemented or field office-supplemented FOTG materials. The STGC is also responsible for quality assurance activities to ensure the completeness and currency of field office FOTG materials;
 - (7) Will establish quality criteria for Resource Management Systems consistent with the National Planning Procedures Handbook;
 - (8) Will provide examples of guidance documents at the Resource Management Systems level to treat the most commonly identified resource problems/opportunities for each locally applicable major land use;
 - (9) Will establish procedures for maintaining up-to-date contents of the FOTG. All FOTG material is to be reviewed by the STGC every 5 years, or more often as needed. Any proposed changes will be reviewed with the State Technical Committee and adjacent States, as applicable. Material is to be updated, as necessary, to maintain technical adequacy and to meet State and local requirements. Each technical guide section, described in §401.3, of this Subpart, is to contain a table of contents listing the material, date of last revision, and the date last reviewed by the STGC (see §401.4, Exhibit: Sample Table of Contents for FOTG Subsections, of this Subpart). Other descriptive information can be added to the table of contents, as appropriate.
 - (10) Will send State technology concerns and needs to the Regional Technology Specialist; and
 - (11) Will establish policy on distribution of the FOTG within the State.
- (d) Staff at the Field Office or Equivalent (hereinafter referred to as the field office or field office service area).
- (1) The field office technical leader (e.g. District Conservationists, Team Leaders, and Group Leaders) will:
 - (i) Identify and report technical needs, local resources and issues, etc. and prepare such material for review and approval by the STGC prior to inclusion into the FOTG;
 - (ii) Maintain the FOTG in the office(s) they supervise and ensure access to current electronic versions;
 - (iii) Ensure that all field office employees maintain reference materials used for technical assistance in the FOTG;
 - (iv) Identify needed changes and/or additions to the FOTG; and
 - (v) Request assistance from specialists in the State, Region, National Headquarters, as appropriate, to make needed changes or additions.
 - (2) All field office employees are responsible for identifying the need for improvements and new technology and for informing field office technical leaders of those needs, who, in turn, inform State Conservationists or designees, as appropriate.

401.2 National Technical Guide Committee (NTGC).

- (a) NTGC membership includes:
- (1) Director, Ecological Sciences Division (who shall serve as the Chairperson);
 - (2) Director, Conservation Engineering Division;
 - (3) Director, Resource Economics and Social Sciences Division;
 - (4) Director, Soil Survey Division;
 - (5) Director, Conservation Operations Division;
 - (6) Director, Watersheds and Wetlands Division;
 - (7) Director, Resource Conservation and Community Development Division;
 - (8) Director, Animal Husbandry and Clean Water Programs Division;
 - (9) Director, Resources Inventory Division;
 - (10) A representative State Conservationist/Pacific Basin or Caribbean Area Director, to serve on a three-year rotation, as appointed by the Deputy Chief for Science and Technology;
 - (11) A Regional Technology Specialist, to serve on a two-year rotation, as appointed by Regional Conservationists' consensus;
 - (12) Executive Secretary, appointed by the NTGC Chairperson;
 - (13) the National Consortium Scientist;
 - (14) the Chairperson of the NCPSS;
 - (15) Representatives from the Cooperative State Research, Education, and Extension Service, Forest Service, the USDA National Organics Program, etc., as identified by the NTGC; and
 - (16) Other NRCS Division Directors or staff members, as identified by the NTGC.
- (b) NTGC responsibilities:
- (1) Coordinate the development of, approve, and issue national FOTG materials, utilizing the official NRCS directive system;
 - (2) Recommend policy changes to the Deputy Chiefs for Science & Technology and Soil Survey & Resource Assessment;
 - (3) Respond to requests for FOTG policy and procedures clarification;
 - (4) Designate a Chairperson of the NCPSS and approve the Subcommittee membership;
 - (5) Act upon recommendations from the NCPSS.
 - (6) Create ad hoc subcommittees, as necessary, to address technical policy and coordination issues;

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- (7) Receive and provide a timely response to requests, recommendations, referrals, and suggestions from the Regional Conservationists;
 - (8) Have the Chairperson appoint an Executive Secretary to the NTGC; and
 - (9) When not available for meetings, NRCS Division Directors will designate a representative to participate in meetings and attend to NTGC business.
- (c) NTGC operations:
- (1) Meet quarterly and otherwise, as convened by the Chairperson.
 - (2) Send materials for NTGC consideration to the Chairperson -- for distribution to members;
 - (3) Distribute minutes of each meeting to all members, all NRCS Deputy Chiefs, Regional Conservationists, and State Conservationists/Pacific Basin and Caribbean Area Directors; and
 - (4) Act upon matters (e.g., those requiring action) within 45 days of receipt, or as determined by the NTGC.

401.3 Content of Technical Guides.

(a) Each section of the FOTG is to include a list of contents, which is to be revised each time a change is made in the contents. The list is to show clearly the date of the last revision and the date of the last STGC review of each item or supplement.

(b) The FOTG is to contain Sections I through V, as identified below, and appropriate subsections:

- (1) Section I - General Resource References;
- (2) Section II - Natural Resources Information;
- (3) Section III - Resource Management Systems and Quality Criteria;
- (4) Section IV - Practice Standards and Specifications; and
- (5) Section V - Conservation Effects.

(c) The FOTG sections will include the following materials, at a minimum:

(1) Section I - General Resource References.

Section I lists references and other information for use in understanding natural resources of the field office service area or in making decisions about resource use and management systems. The actual references listed are to be filed, to the extent possible, in the same location as the FOTG. Computer-based tools used in resource analysis and modeling will be listed in Section I. References kept in other locations will be cross-referenced. Examples include texts and publications dealing with databases found in Section II (below) as well as other resource issues. Subsections can be seen in §401.5, Exhibit: Information and Examples for FOTG Contents, Section I, General Resource References, of this Subpart.

(2) Section II - Natural Resources Information.

(i) Section II contains natural resource data, databases, and procedures for interpretation. These may include Ecological Site Descriptions and Forage Suitability Group Descriptions. This section will have a statement indicating exactly what is used as the “official” copy of the Soil Survey. In some cases separate statements may be needed for maps, tables, and data.

(ii) The following are subsections of Section II of the FOTG:

- (A) Soils Information;
- (B) Climatic Data;
- (C) Cultural Resources Information;
- (D) Threatened and Endangered Species Lists;
- (E) Ecological Site Descriptions; and
- (F) Forage Suitability Group Descriptions.

(iii) See §401.6, Exhibit: Information and Examples for FOTG Contents, Section II, Natural Resources Information, of this Subpart for additional information about subsections of Section II.

(3) Section III - Resource Management Systems and Quality Criteria.

(i) Resource Management Systems (RMS's) will address all identified resource concerns at or above the level of sustainability, taking into account human-cultural, economic and social concerns relative to each of the following natural resources for:

- (A) Soil;
- (B) Water;
- (C) Air;
- (D) Plants; and
- (E) Animals.

(ii) Sample RMS's that treat resource concerns common to the field office service area will be maintained in Section III. Practice standards that make up a system should be identified. The documents shall be prepared according to guidance found in the National Planning Procedures Handbook for formulating RMS's.

(iii) Quality Criteria for treatment required to achieve a RMS's will be established by NRCS and filed in this section of the FOTG. Criteria shall be stated in either qualitative or quantitative terms for each resource consideration. Where national criteria have not been established, the State Conservationist will establish criteria. Where State and/or local regulations establish more restrictive criteria, these must be used in developing the RMS's.

(iv) Sample conservation systems that reflect various program requirements will be maintained in Section III. Those practice standards that make up a system should be identified. When programs exist which define other levels of planning for specific resource issues, clients will be offered alternatives that, as a minimum, meet the criteria of those programs. Where one or more resource concerns do not meet the minimum requirements for sustainability, planning is considered progressive, i.e. when a client is ready, willing, and able to make some, but not all, of the decisions necessary to achieve an RMS's level of management.

(4) Section IV - Practice Standards and Specifications.

(i) Section IV of the FOTG contains conservation practice standards applicable in that field office. It may also include specification guide sheets developed for use with the standards.

(ii) Practice standards establish the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining conservation practices. Standards from the National Handbook of Conservation Practices and interim standards are to be used, and will be supplemented by states, as needed.

(iii) Practice specification guidance, developed by each State, establishes and lists terms and conditions, and how the practice standard will be made site-specific.

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(iv) See Subpart B of this part for policy and procedural details for practice standards and specifications.

(5) Section V - Conservation Effects.

Conservation effects provide indicators of the impacts conservation practices and systems have on the natural and cultural resources. They are based primarily on empirical data and field experience with practices and systems of practices. The effects are listed for each individual practice. States may provide hardcopy effects or refer the user to the Conservation Effects data. (See §401.7, Exhibit: Information and Examples for FOTG Section V, Conservation Effects, of this Subpart.) The effects of systems can be estimated by evaluating the combined effects of practices included in a specific system. When properly planned and applied, systems of conservation practices are generally complimentary and accumulative. Rarely are conservation practice effects opposing or damaging to the natural resources base. This section of the FOTG contains:

- (i) Data on the Conservation Practice Physical Effects (CPPE). The data for each individual practice is national in scope, and States are encouraged to review and localize the data as necessary to reflect those effects expected to occur under local conditions. The National Conservation Effects Data are available for each individual practice in the National Handbook of Conservation Practices - an electronic version is posted on the NRCS Homepage. Conservation effects are covered in the National Planning Procedures Handbook Part 600.4;
- (ii) Data illustrating the effects of typical systems applicable at the field office; and
- (iii) Appropriate procedures and methods for collecting, analyzing, and displaying conservation effects data.
- (iv) Case studies should be developed for the most important resource concerns. Case studies are a way of observing, collecting, and documenting the practical results of conservation treatment, along with the motivations that lead to their adoption. They help us increase the technology base we work from to plan and implement conservation systems.

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401.4 Exhibit: Sample Table of Contents for FOTG Subsections.

Table of Contents (Name of FOTG Subsection)		
Document Name	Date of Last Revision	Last STGC Review Date
Cost Data	10/97	7/99
Climatic Data	10/96	10/99
Threatened & Endangered Species	10/98	12/98

401.5 Exhibit: Information and Examples for FOTG Contents, Section I, General Resource References.

(a) Section I of the FOTG, General Resource References, will contain the following materials, at a minimum:

This section lists references and other information for use in understanding natural resources of the field office service area or in making decisions about resource use and management systems. The actual references listed are to be filed to the extent possible in the same location as the FOTG. References kept in other locations will be cross-referenced; this may include electronic or Internet locations. The following are subsections of Section I of the FOTG:

(1) Reference lists.

Reference lists include applicable discipline handbooks, manuals, and reports commonly used in resource conservation planning and implementation activities such as (consult the Internet for current web locations, where applicable):

- (i) Irrigation and drainage guides;
- (ii) The PLANTS database;
- (iii) The National Register of Historic Places and other regional cultural resources lists;
- (iv) Published soil surveys; State Surface and Ground Water classifications and associated standards (water quality and any fishery), sole source aquifers, and designated Wild and Scenic Rivers;
- Recreational potential appraisals;
- (vii) Natural resources inventories;
- (viii) Reports that identify such items as areas susceptible to flooding;
- (ix) River basin reports;
- (x) Seismic zones;
- (xi) Documentation of useful computer models; and
- (xii) Various products from Institutes, e.g., Soil Quality Kit Guide, Soil Quality Health Card Design Manual, and the Pesticide database.

(2) Cost data.

General reference data on costs, such as cost lists for practice components and other references to economic handbooks.

(3) Maps.

For example, water quality problem areas and areas with a potential water quality problem are to be included here or appropriately referenced.

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(4) Erosion prediction.

Guidance, data, and NRCS approved techniques for predicting soil erosion are to be included here, or appropriately referenced.

(5) Laws.

List of Federal, American Indian Tribal, State, and local laws, ordinances, or regulations that impact Resource Management System development and technical applications such as conservation practice application.

(b) Section I of the FOTG will contain other related materials that the field office staff would deem applicable.

401.6 Exhibit: Information and Examples for FOTG Contents, Section II, Natural Resources Information.

(a) Section II of the FOTG will contain the following, at a minimum:

(1) Soils Information:

(i) Information from the National Soil Information System (NASIS), or State designated "official" copy of the Soil Survey, will be used as the basis of this section. State and area specialists will provide detailed interpretations of soils in Section II.

(ii) Interpretations are specific to the soils identified and mapped in the area. Map units to which the interpretations apply are clearly identified by name, symbol(s), or both. New map unit names and symbols resulting from reclassification of soils are cross-referenced to old names and symbols and shown on a list.

(iii) Soils are described and interpreted to help make decisions about use and management of land. Soil characteristics that limit or affect land use and management are identified, and soils are rated according to limitations, capability, suitability, and/or potential. Examples include land capability classification, prime farmland status, and hydric soil designation.

(iv) This information is available in the "official" copy of the Soil Survey. A copy of the appropriate material can be included in the applicable subsections, or reference can be made to the source document or database maintained in the field office.

(v) Soils legend: This list includes the names of the soil map units and map symbols. This list can include the identification of interpretive groups (if any) of importance in the field office. For map units having two or more soils in their name, interpretive groups are identified for each soil. Where appropriate, the map unit is placed in a group that generally controls the use and management of the area. Alternatively, the list(s) that identifies interpretive groups for applicable land uses can be located in the detailed soil interpretation subsection.

If soil surveys of more than one vintage are used, the symbols used in each are to be identified along with appropriate interpretive groups. For updated areas, where the correlation is complete or a progressive correlation is occurring, only the legend for the most recent mapping is to be used.

(vi) Soil descriptions:

(A) Nontechnical: Soil descriptions for use with individuals, groups, and units of government are included. Each description includes brief references to major limitations e.g., erosion or wetness, and soil potential. Basic information needed to develop these descriptions is in the soil map unit descriptions and in the "official" copy of the Soil Survey.

(B) Technical: Technical descriptions of each soil map unit component and of each soil map unit are provided in this section and available in the field office. If such descriptions are maintained as separate material, the source

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document, or location of electronic files, should be listed here as a reference.

(vii) Detailed soil interpretations: Appropriate technical specialists will supply these for all major land uses in the field office area.

(2) Climatic Data:

(i) This subsection contains local climatic data needed for planning resource management systems and installing conservation practices, such as:

- (A) Record low and high temperatures;
- (B) Averages for such items as rainfall, length of growing season, temperatures, wind velocities, hail incidence, and snowfall;
- (C) Water supply data;
- (D) Probability of receiving selected amounts of precipitation by months; and
- (E) Frost-free periods.

(ii) References should be made to other climatic data in other field office documents.

(3) Cultural Resources Information:

(i) Cultural resources include historic, archaeological, architectural, historic engineering, traditional cultural properties, and historic and cultural landscapes. There are criteria of significance for cultural resources that NRCS must consider during program, project and conservation planning; these criteria (of eligibility for listing in the National Register of Historic Places) are found at 36 CFR Part 60. Significant historic properties are generally over 50 years old; but clearly not all properties of this age meet the significance criteria. This section should include a brief discussion of the nature and distribution of cultural resources across the State and a clear description of the cultural resources review process for the State. It should also include the State Level Agreement with the State Historic Preservation Officer and references to the General Manual title/part and any State handbooks or guidance.

(ii) The section should also include information (including lists), or appropriate references on:

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- (A) Known historic sites, if available;
- (B) NRCS State Office instructions on integration of cultural resources data into project, program and conservation planning;
- (C) A directory of contacts for information on cultural resources (e.g., State Historic Preservation Officer, local historical commissions, State Archaeologist, research institutions);
- (D) A list of cultural resources contractors who work in the State;
- (E) A description of the status of cultural resources investigations in the State;
- (F) A print-out of the listed National Register of Historic Places for the State (update annually);
- (G) A print-out of any State Register of Historic Places;
- (H) Predictive maps or models for archaeological sensitivity for the State;
- (I) Drawings or photos of projectile points and prehistoric pottery types in the State;
- (J) Any State Historic Preservation Officer, State archaeologist or State museum data request forms;
- (K) Site and building/structure inventory forms;
- (L) NRCS State Office cultural resources field worksheet (for undertakings); and
- (M) Any other data or guides that might make field office investigations work well in the State.

(iii) Archaeological site maps contain restricted information and should remain in separate working files within the field office and not within the FOTG.

(4) Threatened and Endangered Species Lists:

This subsection contains information, or appropriate references, on species of plants and animals that are threatened and endangered and are to be accounted for in conservation planning. General descriptions, photos or drawings, inventory forms, or procedures, would be helpful for planning purposes.

(5) Forage Suitability Group Descriptions:

Forage suitability groups are composed of one or more individual soil map units having similar potentials and limitations for forage production. Soils within a forage production suitability group are sufficiently uniform to:

- (i) Support the same adapted forage plants under the same management conditions;
- (ii) Require similar conservation treatment and management to produce the forages selected in the quality and quantity desired; and
- (iii) Have comparable potential productivity.

(6) Ecological Site Descriptions:

Landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a

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distinctive kind and amount of vegetation. Ecological sites are defined for land uses such as rangeland and forestland.

- (b) Section II of the FOTG may contain other related materials that the field office staff would deem applicable.

401.6 Exhibit: Information and Examples for FOTG Contents, Section II, Natural Resources Information.

(a) Section II of the FOTG will contain the following, at a minimum:

(1) Soils Information:

(i) Information from the National Soil Information System (NASIS), or State designated "official" copy of the Soil Survey, will be used as the basis of this section. State and area specialists will provide detailed interpretations of soils in Section II.

(ii) Interpretations are specific to the soils identified and mapped in the area. Map units to which the interpretations apply are clearly identified by name, symbol(s), or both. New map unit names and symbols resulting from reclassification of soils are cross-referenced to old names and symbols and shown on a list.

(iii) Soils are described and interpreted to help make decisions about use and management of land. Soil characteristics that limit or affect land use and management are identified, and soils are rated according to limitations, capability, suitability, and/or potential. Examples include land capability classification, prime farmland status, and hydric soil designation.

(iv) This information is available in the "official" copy of the Soil Survey. A copy of the appropriate material can be included in the applicable subsections, or reference can be made to the source document or database maintained in the field office.

(v) Soils legend: This list includes the names of the soil map units and map symbols. This list can include the identification of interpretive groups (if any) of importance in the field office. For map units having two or more soils in their name, interpretive groups are identified for each soil. Where appropriate, the map unit is placed in a group that generally controls the use and management of the area. Alternatively, the list(s) that identifies interpretive groups for applicable land uses can be located in the detailed soil interpretation subsection.

If soil surveys of more than one vintage are used, the symbols used in each are to be identified along with appropriate interpretive groups. For updated areas, where the correlation is complete or a progressive correlation is occurring, only the legend for the most recent mapping is to be used.

(vi) Soil descriptions:

(A) Nontechnical: Soil descriptions for use with individuals, groups, and units of government are included. Each description includes brief references to major limitations e.g., erosion or wetness, and soil potential. Basic information needed to develop these descriptions is in the soil map unit descriptions and in the "official" copy of the Soil Survey.

(B) Technical: Technical descriptions of each soil map unit component and of each soil map unit are provided in this section and available in the field office. If such descriptions are maintained as separate material, the source

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document, or location of electronic files, should be listed here as a reference.

(vii) Detailed soil interpretations: Appropriate technical specialists will supply these for all major land uses in the field office area.

(2) Climatic Data:

(i) This subsection contains local climatic data needed for planning resource management systems and installing conservation practices, such as:

- (A) Record low and high temperatures;
- (B) Averages for such items as rainfall, length of growing season, temperatures, wind velocities, hail incidence, and snowfall;
- (C) Water supply data;
- (D) Probability of receiving selected amounts of precipitation by months; and
- (E) Frost-free periods.

(ii) References should be made to other climatic data in other field office documents.

(3) Cultural Resources Information:

(i) Cultural resources include historic, archaeological, architectural, historic engineering, traditional cultural properties, and historic and cultural landscapes. There are criteria of significance for cultural resources that NRCS must consider during program, project and conservation planning; these criteria (of eligibility for listing in the National Register of Historic Places) are found at 36 CFR Part 60. Significant historic properties are generally over 50 years old; but clearly not all properties of this age meet the significance criteria. This section should include a brief discussion of the nature and distribution of cultural resources across the State and a clear description of the cultural resources review process for the State. It should also include the State Level Agreement with the State Historic Preservation Officer and references to the General Manual title/part and any State handbooks or guidance.

(ii) The section should also include information (including lists), or appropriate references on:

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- (A) Known historic sites, if available;
- (B) NRCS State Office instructions on integration of cultural resources data into project, program and conservation planning;
- (C) A directory of contacts for information on cultural resources (e.g., State Historic Preservation Officer, local historical commissions, State Archaeologist, research institutions);
- (D) A list of cultural resources contractors who work in the State;
- (E) A description of the status of cultural resources investigations in the State;
- (F) A print-out of the listed National Register of Historic Places for the State (update annually);
- (G) A print-out of any State Register of Historic Places;
- (H) Predictive maps or models for archaeological sensitivity for the State;
- (I) Drawings or photos of projectile points and prehistoric pottery types in the State;
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- (M) Any other data or guides that might make field office investigations work well in the State.

(iii) Archaeological site maps contain restricted information and should remain in separate working files within the field office and not within the FOTG.

(4) Threatened and Endangered Species Lists:

This subsection contains information, or appropriate references, on species of plants and animals that are threatened and endangered and are to be accounted for in conservation planning. General descriptions, photos or drawings, inventory forms, or procedures, would be helpful for planning purposes.

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Forage suitability groups are composed of one or more individual soil map units having similar potentials and limitations for forage production. Soils within a forage production suitability group are sufficiently uniform to:

- (i) Support the same adapted forage plants under the same management conditions;
- (ii) Require similar conservation treatment and management to produce the forages selected in the quality and quantity desired; and
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(6) Ecological Site Descriptions:

Landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a

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distinctive kind and amount of vegetation. Ecological sites are defined for land uses such as rangeland and forestland.

(b) Section II of the FOTG may contain other related materials that the field office staff would deem applicable.

401.7 Exhibit: Information and Examples for FOTG Section V, Conservation Effects.

(a) Section V of the FOTG will contain the following, at a minimum:

(1) Conservation effects information will typically include the resource setting (i.e., soil, slope, etc.), the specific conservation treatments applied, the kinds, amounts, and timing of actions undertaken by decision-makers in their operations, and the expected outcome in terms of solving resource problems and meeting social, cultural, and economic objectives.

(i) Conservation Practice Physical Effects (CPPE) provide an indication of the actual physical effects expected to occur when an individual practice is installed. The CPPE information is recorded in table format for each official NRCS practice. The information is available electronically in the National Handbook of Conservation Practices posted through the NRCS homepage. The tables can be downloaded as a word document and localized as necessary to accommodate local site conditions. Most of the information is based on empirically derived information rather than scientific data. As science based data becomes available, the CPPE tables can be evaluated and updated as appropriate by the discipline specialists at National Headquarters. The CPPE serves as an excellent critique of each individual practice.

(ii) Effects of conservation may be expressed in either narrative or quantitative terms that represent factual data on actual or expected results of the specified conservation treatment as applied to the resource setting. Effects of conservation will normally be expressed as a condition or stage of the factors associated with a specified conservation action. For example, typical effects could be: a corn yield of 110 bushels per acre; an erosion prediction rate of 4 tons per acre per year; irrigation efficiency of 60%; or "a significant reduction in ephemeral gully erosion will occur with this treatment." "Impacts" is a closely related term. An "impact" is a measure of the change between the stage or condition of one treatment alternative to existing conditions. Guidance on the use of effects information in the conservation planning process is contained in the National Planning Procedures Handbook.

(iii) Conservation effects information will include conservation treatments on the five natural resources and their considerations as described in Section III above.

(A) Examples of effects of conservation treatment on the five natural resources include, but are not limited to:

- Expected effect on sheet and rill, wind, or ephemeral gully erosion;
- Indicators or measures of soil quality, such as soil crusting, organic matter, soil aggregation, tilth, compaction, and infiltration;
- Where applicable, indicators of soil deposition;
- Measures or indicators of effects on quality and quantity of surface or subsurface waters, such as chemical runoff as influenced by the conservation system;

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- Indicators of effects on air, such as airborne particulates, odors, and chemical drift;
 - Effects on plant conditions and management, such as expected status of range conditions with the indicated range conservation actions; and
 - Measures of conservation effects on wild and domestic animals, including animal waste uses and effects on the resource base.
- (B) Effects information will also include management, social, cultural, and economic information. Factors such as cost, client acceptability, and physical changes to cultural resource sites associated with the specific conservation treatment component are to be identified. (for example, installation and maintenance costs, etc.)

(iv) Information developed on conservation effects will vary significantly in scope and detail depending on the resource conditions in the local area as well as upon the needs for technical reference materials to carry out conservation activities in that location. Section V of the FOTG should contain summaries of conservation effects data relevant to the field office area. The format of the display should be easily understandable so as to make the information valuable as ready reference material for the conservation planner and decision-maker to facilitate planning and decision making. The display will show the degree of resource protection achieved.

- (A) Options may be evaluated by simply comparing the differences in the effects of the options.
- (B) The NTGC will provide specific examples of format guidance to States for recording and displaying conservation effects data.
- (C) Collection of data on conservation effects is a long-term effort to be undertaken as part of the follow-up element in the planning process. Initial efforts may provide effect information for only the most common situations. Over time, additional resource situations and treatment alternatives will be examined to add depth and breadth to the available conservation effect information.
- (D) Information on conservation effects may be refined or updated over time as needed in the local area. The data on conservation effects should be useful in identifying suitable conservation treatment applicable to the area, and serves as technical reference materials when working with decision-makers in the conservation planning process. (See the National Planning Procedures Handbook.)

(2) Data on conservation effects may be developed by following two general approaches:

- (i) Observe and document the experiences of cooperators: Typically, conservationists will make observations of conservation treatments applied by one or more decision-makers in the first or second year following the application and record the effects experienced. This data can be recorded in conservation field notes and entered into electronic databases. Effects information may also be available from conservation field trials, university research plots, or other trials in the area. Resource data might include: yields, costs, sustainability, balance with

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ecological goals, whole farm enterprise planning versus site-specific field by field planning. AND

(ii) Use models of processes impacted by conservation actions to simulate the physical, agronomic, or other effects of treatment systems. Actual results or graphs summarizing results could be developed by State staffs and provided to field offices for inclusion in the FOTG. Appropriate models or references to the appropriate models may be stored in FOTG Section V to facilitate use in collecting and analyzing conservation effects data.

(3) Data relating effects of conservation practices on the five natural resources may be displayed in tabular, narrative, or matrix form. This will be useful in developing RMS's for inclusion in FOTG Section III.

(b) Section V of the FOTG may contain other related materials that the field office staff would deem applicable.