

## SECTION III

### CROP

#### PLANNING RESOURCE MANAGEMENT SYSTEMS (RMS)

Successful resource management on cropland is the correct application of a combination of practices that will meet the SWAPA plus H needs of the cropland ecosystem (soil, water, air, plant, animal resources, plus human) and the objectives of the land user.

The minimum quality criteria that must be met on cropland for each of the resource concerns is explained in Section III- Quality Criteria of the Field Office Technical Guide (FOTG).

- **ESSENTIAL practices** must be included in the cropland resource management system regardless of production systems or site conditions. They are always needed.
- **NEEDED practices** will be included if certain resource concerns are present. For example if the land is irrigated then irrigation water management is must be included in the plan. It becomes essential. If pests are controlled and nutrients are applied then Pest Management and Nutrient Management become essential. **Please note that NEEDED practices become ESSENTIAL practices, if the resource condition mentioned below is met.**
- **DESIRABLE practices** are applied to enhance the resource base beyond the minimum quality criteria.

The management of growing crops and their residue is the foundation on which the cropland management system is built.

- **Conservation Cropping Rotation** (328) is **ESSENTIAL** because it is the mechanism by which plants are grown and manageable residues produced for soil maintenance and/or improvement. It is also needed to insure the rotation has long-term sustainability.
- **Conservation tillage** is the second **ESSENTIAL** practice of a cropland **RMS**. One of the following practices must be used: **Residue management, Seasonal** (344); **Residue management, Mulch-Till** (329B); **Residue management, No-till & Strip-Till** (329A); or **Residue management Ridge-Till** (329C). These practices involve the crop residue production and management from the high residue producing crops such as corn, sorghum (milo), or small grain.
- **Water Management** (449) is an **NEEDED** practice when cropland is irrigated. Practices such as **Irrigation Systems, Irrigation Water Conveyance,** and **Irrigation Land Leveling** (464) may be **NEEDED** to complete the **RMS**.
- **Pest Management** (595) is **NEEDED** when pest are control in the management unit.
- **Nutrient Management** (590) is **NEEDED** when inorganic or organic nutrients are

applied to the management unit.

There are other practices, which may be **NEEDED** to complement the client's production practices and site conditions. They are **Cover Crop** (340), **Mulching** (484), **Terraces** (600) and **Grassed Waterways** (412).

For example, crop residues produced and managed (or added) in defined amounts are generally necessary for wind erosion control and maintaining or improving soil condition. The amount needed for soil condition can be the same as that for erosion control, or an additional amount may have to be included. The problem could be solved with a Cover Crop and/or Mulching. In this instance these practices would become **NEEDED** for the completion of the **RMS**.

Occasionally, there are **DESIRABLE** practices not required to meet the minimum quality criteria level for a resource management system. These practices may be **DESIRABLE** to the client for enhancement of the resource base or provide for multiple uses. For example, **Wildlife Upland Habitat Management** (644) may be a **DESIRABLE** practice for cropland to meet producer objectives or provide for multiple land uses.

Resource management systems are developed by adding the **NEEDED** and/or **DESIRABLE** practices to the **ESSENTIAL** ones. The combination of practice meet the quality criteria established for each cropland resources (soil, water, air, plant animal, and human) and meet the objectives of the client. When multiple land use is an objective, the needs of each use and the effects of each practice must be considered in the selection and application design of each practice to ensure compatibility.

The following tables show **ESSENTIAL** and **NEEDED** and/or **DESIRABLE** conservation practices applicable to cropland. Table 1 shows the **ESSENTIAL** practices for NM. Table 2 shows **NEEDED** and/or **DESIRABLE** practices. There may be additional practices not included on Table 2 that will benefit cropland.

**Table 1**

<b>ESSENTIAL CROPLAND PRACTICES</b>		
<b>Practice Name</b>	<b>Practice Code</b>	<b>Need</b>
<b>Conservation Cropping Rotation</b>	328	<b>AND</b>
One of the following: <ul style="list-style-type: none"> <li>• <b>Residue management</b></li> <li>• <b>Seasonal; Residue management, Mulch-Till</b></li> <li>• <b>Residue management, No-till &amp; Strip-Till</b></li> <li>• <b>Residue management Ridge-Till</b></li> </ul>	344 329B 329A 329C	<b>AND</b>
<b>Pest Management</b> ( <i>if pests are controlled</i> )	595	<b>AND</b>
<b>Nutrient Management</b> ( <i>if fertilizer or manure is used</i> )	590	<b>AND</b>
<b>Water Management</b> ( <i>if irrigated</i> )	449	

Table 2

<b>NEEDED and/or DESIRABLE Practices</b>	
<b>Practice Name</b>	<b>Practice Code</b>
<b>Anionic Polyacrylamide (PAM) Erosion Control</b>	450
<b>Chiseling and Sub-soiling</b>	324
<b>Conservation Cover</b>	327
<b>Contour Farming</b>	330
<b>Contour Orchard and Other Fruit Area</b>	331
<b>Cross Wind Ridges</b>	589A
<b>Cross Wind Stripcropping</b>	589B
<b>Cross Wind Stripcropping</b>	589C
<b>Field Border (Buffer)</b>	386
<b>Filter Strip (Buffer)</b>	393
<b>Grassed Waterway (Buffer)</b>	412
<b>Heavy Use Area Protection</b>	561
<b>Herbaceous Wind Barriers (Buffer)</b>	503
<b>Irrigation Land Leveling</b>	464
<b>Irrigation System – (Several)</b>	441, 442, 443, & 447
<b>Irrigation Water Conveyance – (Several)</b>	Many
<b>Mulching</b>	484
<b>Sediment Basin</b>	350
<b>Structure for Water Control</b>	587
<b>Surface Roughening</b>	609
<b>Terrace</b>	600
<b>Tree/Shrub Establishment</b>	612
<b>Upland Wildlife Habitat Management</b>	645
<b>Water Well</b>	642
<b>Windbreak/Shelterbelt Establishment (Buffer)</b>	380

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RESOURCE MANAGEMENT SYSTEMS GUIDANCE DOCUMENT

RESOURCE SETTING

.MLRA 70B, CP2 – Pecos Canadian Plains – Conez, Redonda, Quay, San Jose soils, level to moderately sloping, conventional tilled dryland wheat.

RESOURCE PROBLEMS

SOIL: - Wind and water, compaction.  
WATER: - Overland flow, water management (non-irrigated).  
AIR: - Dust  
PLANT: - Productivity, nutrient, pest.  
ANIMAL: - None identified  
HUMAN - None identified

RMS #1	Practice #	SOIL			WATER		AIR			PLANT		
		Wind	Sheet & Rill	Compaction	Over-Land Flow	Water Mgt. (nonir)	Dust	Productivity	Nutrient	Pest		
Cons. Crop Rotation.	328	+	+	+	+	+		+		+	-	-
Res. Use, Seasonal	344	+	+	+	+	+		+		+	0	-
Grassed Waterway	412	+	F	N/A	+	+		0		N/A	N/A	N/A
Terraces	600	+	+	0	+	+		0		+	+	0
Stripcropping (Wind)	589	+	0	0	0	N/A		+		+	N/A	N/A
Nutrient Mgt.	590	0	0	+	N/A	N/A		N/A		+	+	+
Pest Mgt.	595	0	0	0	0	0		N/A		+	+	+
RMS #2		SOIL			WATER		AIR			PLANT		
Cons. Crop Rotation	328	+	+	+	+	+		+		+	-	-
Res. Use, Mulch-Till	329	+	+	+	+	+		+		+	-	-
Grassed Waterway	412	+	F	N/A	+	+		0		N/A	N/A	N/A
Terraces	600	+	+	0	+	+		0		+	+	0
Nutrient Mgt.	590	0	0	+	N/A	N/A		N/A		+	+	+
Pest Mgt.	595	0	0	0	0	0		N/A		+	+	+

(+) positive effect (-) negative effect (0) none or negligible effect (F) facilitating practice (n/a) practice not applicable

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**RESOURCE SETTING**  
MLRA 77C, HP3 – Southern High Plains – Kimbrough, Kermit, and Wink soils (fine sands, loamy fine sands). Continuous cotton, conventional tilled, sprinkler irrigated.

**RESOURCE PROBLEMS**  
SOIL: Wind erosion, tilth and compaction, deposition off site.  
WATER: Water management (Irri).  
AIR: Dust  
PLANT: Productivity, health and vigor, nutrient.  
ANIMAL: None identified  
HUMAN: None identified

RMS #1	Practice #	SOIL			WATER			AIR			PLANT		
		Wind Erosion	Tilth & Compact.	Deposition Off-site		Water Mgt (Irr)			Dust		Productive	Health & Vigor	Nutrient
Cons. Crop Rotation	328	+	+	+		+			+		+	+	-
Res. Use, Seasonal	344	+	+	+		+			+		+	+	0
Cover Crop	340	+	+	+		+			+		+	+	+
Irr. System (Sprinkler)	442	+	+	+		+			+		+	+	0
Irr. Water Convey	430EE	F	F	F		+			0		F	F	N/A
Irr. Water Mgt.	449	+	+	+		+			0		+	+	+
Nutrient Mgt.	590	0	+	0		N/A			N/A		+	+	+
Pest Mgt.	595	0	0	0		0			N/A		+	+	+
<b>RMS #2</b>													
Cons. Crop Rotation	328	+	+	+		+			+		+	+	-
Residue Use, Seasonal	344	+	+	+		+			+		+	+	0
Stripcropping Wind	589	+	0	+		N/A			+		+	+	N/A
Irr. System (Sprk)	442	+	+	+		+			+		+	+	0
Irr. Water Convey	430EE	F	F	F		+			0		F	F	N/A
Irr. Water Mgt.	449	+	+	+		+			0		+	+	+
Nutrient Mgt.	590	0	+	0		N/A			N/A		+	+	+
Pest Mgt.	595	0	0	0		0			N/A		+	+	+

(+) positive effect (-) negative effect (0) none or negligible effect (F) facilitating practice (n/a) practice not applicable