

Planning Guidance for Treating Near-Stream Cropland Areas

Revisions to state regulations for Erosion and Sedimentation Control Requirements of Chapter 102.4(a) under PA's Clean Streams Law went into effect November 2010. These regulations require implementation of additional Best Management Practices (BMPs) to minimize accelerated erosion and sedimentation on crop fields with less than 25% plant cover (living and dead plant material) within 100 feet of a river, or perennial or intermittent stream. These regulations are applicable to all cropland farmers in Pennsylvania. As part of a CNMP, all AFOs receiving NRCS assistance (TA or FA) must meet this requirement. Non-AFO conservation plans will document whether or not the customer's written plan meets this regulation.

Low cover scenarios are usually found following the harvest of low residue crops and/or following

certain tillage practices. Examples of low residue crops include traditional-cut corn silage (<12" stalk remaining), tobacco, potatoes, low-yielding soybeans and corn grain where stover has been harvested.

BMPs that minimize pollution to waters of the Commonwealth as well as NRCS Conservation Practice Standards found in the FOTG can address low cover near stream conditions. The table, BMP Alternatives for Low Cover (< 25%) Near-Stream Crop Fields, lists some common situations that create low cover and some common BMPs that increase cover to acceptable levels. The BMPs that DEP has specifically listed as acceptable for addressing low cover near-stream areas are provided in the text following the table (Exhibit 1).

BMP Alternatives for Low Cover (< 25%) Near-Stream Crop Fields	
Common conditions creating low cover near-stream conditions listed on the left, some common BMP alternatives provided on the right.	
Low Cover Near Stream Field Condition	Best Management Practice
Corn silage harvest leaving low surface cover	<ul style="list-style-type: none"> • Cover crop (340) established immediately after harvest • Establish and maintain 35-foot <i>Permanent Vegetated Buffer</i> • Practice continuous (> 7 years) no-till system • Harvest silage high leaving >20 inch stalk, then roll stalks flat to ground
Inversion tillage or aggressive tillage leaves low surface residue for part of the year	<ul style="list-style-type: none"> • After fall tillage – plant cover crop as soon as practical, ideally within several days of tillage. • In spring, till the near-stream field last, plant as soon as practical ideally within several days of tillage. • Establish a permanent grass or other sod in near-stream field
Rotation includes low residue crop	<ul style="list-style-type: none"> • Substitute high residue crop near-stream • Establish and maintain 35-foot <i>Permanent Vegetated Buffer</i> • Establish a permanent grass or other sod in near-stream field • Practice continuous (> 7 years) no-till system



Exhibit 1: Near-Stream Cropland Cover Requirements and Alternative BMPs

State Erosion and Sedimentation regulations require that all crop fields within 100 feet of a river or a perennial or intermittent stream have 25% plant cover (living and dead plant material) throughout the year or implement additional BMPs to minimize accelerated erosion and sedimentation.

Pennsylvania DEP has provided the following BMPs that when implemented are acceptable alternatives to meet near-stream requirements when cover is <25%.



1. **Modify the crop rotation** to exclude the low cover situation in the field near the stream. The near-stream field may be planted to permanent sod forming crops such as grass hay, or when silage is in the rotation, substitute corn grain for silage in the near-stream field.



2. **Buffers** may be used alone or as part of a system in these field locations. Buffers include:
 - a 35-foot Permanent Vegetated Buffer and NRCS conservation practice standards for Filter Strip (393)
 - Riparian Herbaceous Cover (390)
 - Riparian Forest Buffer (391)

35-foot Permanent Vegetated Buffers between the cropped field and the stream may be woody and /or herbaceous vegetation (in any combination) provided runoff flowing into, within, or out of the buffer is primarily sheet flow with no converging rills or gullies visible. Additional field edge vegetation may need to be established in existing partial buffers to meet these criteria. Refer to Section IV of the PA Tech Guide for NRCS practice criteria. Buffers serve as the last line of defense between field and stream.

Permanent Vegetated Buffer – A permanent strip of perennial vegetation (existing or established) parallel to the contours of, and perpendicular to, the dominant slope of the field, located between the field and the protected land feature (stream, lake, pond, sinkhole) and has flow characteristics that are primarily sheet flow with no obvious concentrated flow (converging rills, ephemeral gullies, classic gullies) into/within/leaving the buffer.



3. **Continuous Residue and Tillage Management – No-Till** (329) must be practiced continuously for seven or more uninterrupted years. After seven years, soil consolidation reduces erosivity by approximately 50% compared to tilled soil. No-till must be continuous and permanent for this management to achieve this conservation benefit.



4. **Harvest corn silage** to leave 20 or more inches of standing stalk, then flatten remaining stalks by rolling the field stubble.



5. **Cover Crop (340)** should be planted as soon as practically possible, ideally within several days of summer crop harvest. The interval between summer crop harvest and cover crop planting should never exceed 10 days. Cover crops provide cover, scavenge nutrients, reduce erosion, and improve soil quality. When properly managed, certain cover crops are suitable grazing and silage forage sources. Select species from Table 1 of the 340 standard meeting the purpose Erosion Control and Surface Water Protection.



6. **Tillage** –Inversion tillage (moldboard plow) and/or chisel/disk systems that leave less than 25% cover will require additional BMPs or greater attention to management details. The most common tillage scenarios and management recommendations include:
 - a. *Spring tillage for summer annual or perennial forage crops:* Near-stream fields should be the last fields tilled prior to planting and planting should occur as soon as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.
 - b. *Late-summer tillage for annual or perennial forage crops:* The near-stream fields should be planted as soon as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.
 - c. *Fall tillage for winter grain or cover crops:* For winter grains, the near-stream fields should be planted as soon after tillage as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.