BMPs & Management Measures Structural & Nonstructural

2011 National Tribal Water Quality Conference

Pojoaque Pueblo, NM

November 17,2011

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Definitions

- **What are *Best Management Practices*? (BMPs)**

- Either **physical or cultural controls** working individually or as a group, **appropriate to the source, location, and area climate for the pollutant to be controlled**. These are a basis for estimating the effectiveness, costs, and economic impacts of achieving the management measures

Definitions

- **What are *Management Measures*?**

- **Economically achievable** actions to **control the addition of pollutants** to our waters, which provide the greatest degree of pollutant reduction through the application of the best available NPS controls

Know Your Water Quality Goals

Types of BMPs

- Structural
  - Moving earth
  - Planting things
  - Construction
- Non-structural
  - Institutional changes
  - Ordinance development
  - Watershed planning
  - Inventories

Approaches in selecting BMPs

- Control pollutants at the source
  - Stormwater infiltration
- Provide treatment for special wastes
  - Manure management/containment
- Prevent stream and river bank erosion
  - Preserve/replace vegetation
- Redesign developed areas
  - Keep runoff on site

How to Select BMPs and MMs

Select Management Measures by category of pollution (agriculture, forestry)

Select BMPs by the source of pollution, site conditions and climate factors (rain gardens, native plants, fencing)

Think about a Treatment Train

- Source controls
- Site controls
- Neighborhood controls
- Regional controls

What it takes to get a BMP implemented

- Technical information
  what is the problem
  you are trying to solve
- Partnerships – look at what is being used in your area
- Clear understanding of the outcome desired

Do you see an opportunity for BMPs?

How would you go about choosing the BMPs?

Who would do the implementation?

What climate assumptions would you make?

Non-Structural

Chapter 48

Water Resources Ordinance

Kanekalunyuhs Olihwake

the matters of the different kinds of waters

48.1-1 Purpose and Policy

48.2-1 Authority

48.3-1 Definitions

48.4-1 Powers and Duties

48.5-1 Review

48.6-1 Reporting

48.3-7. “Non-point Source” means a land management activity which contributes to runoff,seepage or percolation which adversely affects or threatens the quality of waters of the Reservation and which is not a point source as defined in Section 3-10.

48.6-5. Oneida Environmental Fund established. The Oneida Environmental Fund is hereby established. Any and all monies collected pursuant to this Ordinance shall be deposited in the Oneida Environmental Fund. This fund shall be used by the Tribe to defray the expense of administering this Ordinance, and to fund pilot projects and provide pollution control and prevention grants to persons at the discretion of the Department, and subject to the availability of funds.

Adopted - BC-5-08-96-B

Conservation Plan

Partnership NRCS and Bay Mills Indian Community

This plan is a dynamic and nonbinding document produced to help preserve and protect the natural resources on the Bay Mills Indian Community (BMIC) tribal lands for present and future generations. BMIC is located in Michigan's Upper Peninsula,....

The main objectives for this plan include the protection of surface and ground water quality, a reduction in stream bank and soil erosion, and the enhancement of existing wildlife habitat....

Once installed, all practices should be periodically inspected and maintained, as needed, according to the operation and maintenance plan, provided and approved by NRCS. All operation and maintenance will be the responsibility of the tribe. It is recommended that the plan be reviewed and updated as practices are implemented and the management objectives change. Please contact NRCS for help when updating your plan.


13th Annual
LAKESFEST
June 20, 2009
Downtown Lac du Flambeau
Saturday, 10a.m. to 3p.m.
"Water is life within the sacred circle."
Educational Displays
Free Hot Dogs, Popcorn & Soda
Games & Activities
Live Entertainment
Canoe Races with prizes.
Raffles
• For a $1,000 Gander Mountain Gift card.
• Two tickets and two-night hotel stay for Green Bay Packers Season Opener vs. Chicago Bears.
• Patio Set with Grill.
• Plus hourly raffles.

Another

Non – Structural Example

Structural BMPs

Septic replacement

Before and After

Burnsville Raingardens **Designed by: Barr Engineering**

More BMPs

programs, and other electronic-based materials such as those included in these web based pages.

What is in eFOTG?

Section I — General References
In this section you will find general state maps, descriptions of Major Land Resource Areas, watershed information, and links to NRCS reference manuals and handbooks. Section I contains links to researchers, universities, and agencies we work. Section I also contains conservation practice costs, agricultural laws and regulations, cultural resources, and information about protected plant and animal species.

Section II — Soil and Site Information
In this section you will find detailed information about soil, water, air, plant, and animal resources. NRCS Soil Surveys, Hydric Soils Interpretations, Ecological Site Descriptions, Forage Suitability Groups, Cropland Production Tables, Wildlife Habitat Evaluation Guides,

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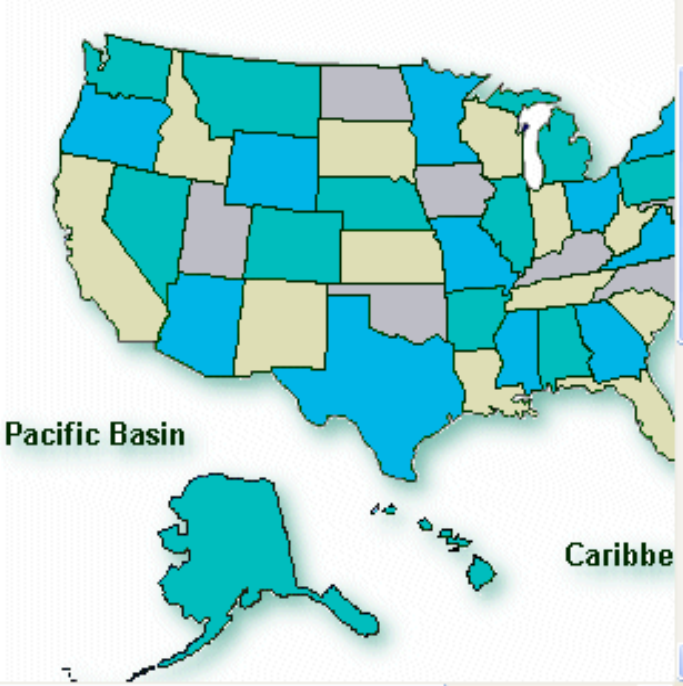

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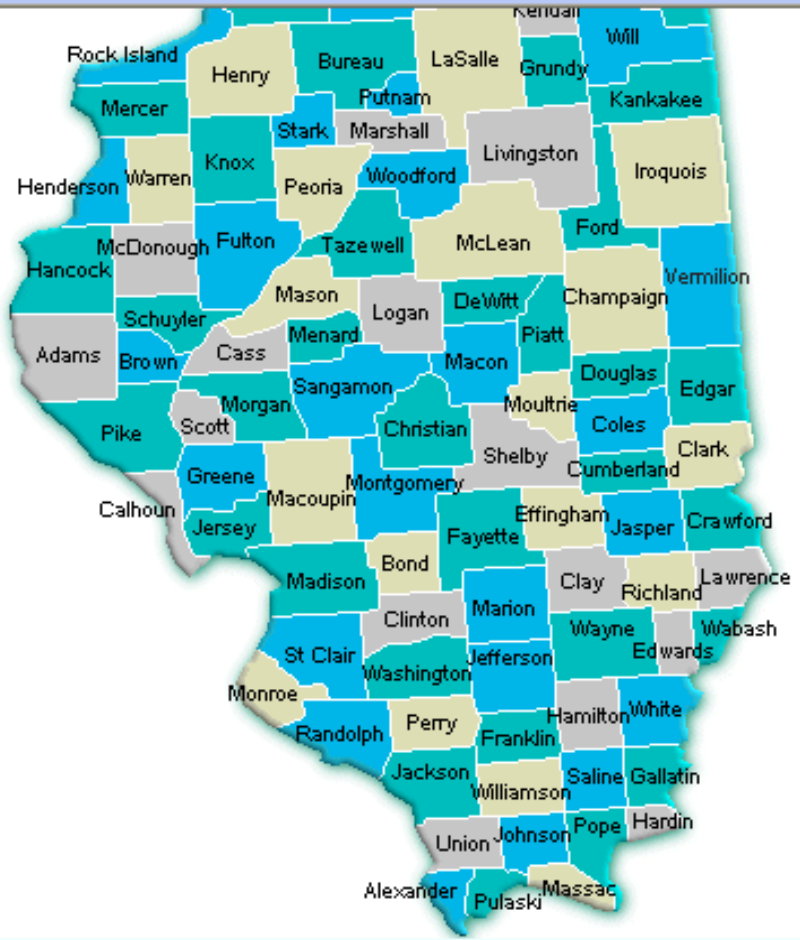

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NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
WATER AND SEDIMENT CONTROL BASIN
(No.)
CODE 638

NRCS, Illinois March 2008

- Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the electronic Field Office Technical Guide.

- **DEFINITION**

- An earth embankment or a combination ridge and channel generally constructed across the slope and minor watercourses to form a sediment trap and water detention basin.

- **PURPOSES**
- A water and sediment control basin may be established to:

- • Improve farmability of sloping land
- • Reduce watercourse and gully erosion
- • Trap sediment
- • Reduce peak rate of flow at downstream
- locations
- • Improve downstream water quality

TABLE 1. Agricultural Practices

PRACTICE (NRCS Practice Code) (ADDITIONAL SOURCES OF INFORMATION)	TARGETED POLLUTANTS B bacteria F floatables N nutrients DO dissolved oxygen H hydrocarbons TP temperature T toxics S sediment	MECHANISM												
		SOURCE CONTROL							TREATMENT CONTROL					
		Managerial/ Operational	Good Housekeeping	Collection/ Conveyance	Containment	Reduction/ Elimination	Protection	Stabilization	Biological Treatment	Chemical Treatment	Filtration	Infiltration	Sedimentation
NONIRRIGATED CROPLAND													
Alley Cropping (311)	N, S							✓			✓		
Contour Buffer Strips (332)	N, S						✓				✓		
Conservation Cover ((327)	N, S						✓	✓					
Conservation Crop Rotation (328)	N, S					✓							
Contour Farming (330)	N, S					✓							
Cover and Green Manure Crop (340)	N, S						✓						
Critical Area Planting (342)	N, S						✓						
Deep Tillage (324)	N, S												
Field Border (386)	N, S						✓						
Field Windbreak (380)	N, S						✓						
Filter Strip (393)	N, S										✓		
Grassed Waterway (412)	N, S							✓					
Mulching (484)	N, S						✓						
PAM Erosion Control (450)	N, S						✓	✓		✓			
Pasture and Hayland Planting (512)	N, S	✓											
Residue Management (329)	N, S						✓						

EPA and Management Measures/BMPs

http://www.epa.gov/owow/nps/pubs.html

National Management Measures to Control Nonpoint Source Pollution from

Agriculture

Forestry

Hydromodification

Marinas and Recreational Boating

Urban Areas

AND

To Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution

Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters

National Menu of Stormwater Best Management Practices

- The National Menu of Best Management Practices for Stormwater Phase II was first released in October 2000. EPA has renamed, reorganized, updated, and enhanced the features of the website.

- Urban Management Measures Guidance- The National Management Measures to Control Nonpoint Source Pollution from Urban Areas helps municipalities and citizens in urban areas protect waterbodies from polluted runoff resulting from everyday activities. These scientifically sound techniques are the best practices known today. The guidance helps municipalities implement their Phase II stormwater permit programs, and states implement their nonpoint source control programs.
- Page http://www.epa.gov/npdes/stormwater/menuofbmps

International BMP Database

www.bmpdatabase.org

Targeting Best Management Practices

- Until you have quantitative knowledge of:
  a) The nature and source of the WQ problem
  b) Your water-quality based goals
  c) The BMPs most effective at solving your impairments specific to your location….

YOU'RE NOT READY TO IMPLEMENT BMPS

Thank you