CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	10/10/2008
PRACTICE: Vegetated Treatment Area 635		Baseline Setting: Crop or grassland converted to VTA			
		Appropriate Land Use(s): Headquarters, Hay, Pasture			

RESOURCES, CONSIDERATIONS AND CONCERNS	**PHYSICAL EFFECTS**	**RATIONALE**
SOIL - EROSION		
Sheet and Rill	Moderate to Substantial Improvement	Permanent vegetation established.
Wind	Moderate to Substantial Improvement	Permanent vegetation established.
Ephemeral Gully	Not Applicable	Not applicable.
Classic Gully	Not Applicable	Not applicable.
Streambank	Not Applicable	Not applicable.
Shoreline	Not Applicable	Not applicable.
Irrigation Induced	Not Applicable	Not applicable.
Mass Movement	Not Applicable	Not applicable.
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.
SOIL – CONDITION		
Organic Matter Depletion	Moderate Improvement	Permanent vegetation established and organic matter captured
Rangeland Site Stability	Not Applicable	Not applicable.
Compaction	Moderate Improvement	Permanent vegatation established
Subsidence	Not Applicable	Not applicable.
Contaminants:		
• Salts and other Chemicals	Slight to Moderate Worsening	Use of the practice requires adding contaminants to the soil surface, some of which will infiltrate.
• Animal Waste and other Organics - N	Slight to Moderate Worsening	Use of the practice requires adding contaminants to the soil surface, some of which will infiltrate.
• Animal Waste and other Organics - P	Slight to Moderate Worsening	Use of the practice requires adding contaminants to the soil surface, some of which will infiltrate.
• Animal Waste and other Organics - K	Slight to Moderate Worsening	Use of the practice requires adding contaminants to the soil surface, some of which will infiltrate.
• Commercial Fertilizer - N	Neutral	Nutrients come from manure not fertilizer
• Commercial Fertilizer – P	Neutral	Nutrients come from manure not fertilizer
• Commercial Fertilizer – K	Neutral	Nutrients come from manure not fertilizer
• Residual Pesticides	Not Applicable	Not applicable.
Damage from Sediment Deposition	Not Applicable	Not applicable.

WATER – QUANTITY		
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.
Excessive Seepage	Slight worsening	Infiltration at area has the potential to aggravate already saturated conditions.
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.
Excessive Subsurface Water	Slight to Moderate Worsening	Infiltration in the treatment area will add to subsurface water.
Drifted Snow	Not Applicable	Not applicable.
Inadequate Outlets	Not Applicable	Not applicable.
Inefficient Water use on Irrigated Land	Not Applicable	Not applicable.
Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.
Aquifer Overdraft	Slight Improvment	Infiltrating water in the treatment area will increase groundwater.
Insufficient Flows in Water Courses	Not Applicable	Not applicable.
WATER – QUALITY		
In Groundwater:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Slight to Moderate Worsening	The action entails the application of waste which increases the potential for groundwater contamination.
• Excessive Salinity	Slight to Moderate Worsening	The action entails the application of waste which increases the potential for groundwater contamination.
• Harmful Levels of Heavy Metals	Neutral	Heavy metals are rarely associated with manure, however, infiltrating water in treatment strip will increase soluble contaminants moving to groundwater.
• Harmful Levels of Pathogens	Neutral	Infiltrating water in treatment area will increase soluble contaminants moving to groundwater, however there will be die-off as pathogens are trapped in the vegetation and increased microbial activity enhances competition with pathogens.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
In Surface Water:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Moderate to Substantial Improvement	Infiltration and plant uptake in the treatment area will remove contaminants from polluted

		runoff and waste water.
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Vegetation protects soil surface and traps sediment, nutrients and other materials.
• Excessive Salinity	Slight to Moderate Improvement	Infiltration in the treatment area may remove some salts from polluted runoff and waste water.
• Harmful Levels of Heavy Metals	Neutral	Heavy metals are rarely associated with manure; however, infiltration and plant uptake in the treatment strip will remove contaminants from polluted runoff and waste water.
• Harmful Temperatures	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Substantial Improvement	Infiltration and plant uptake in the treatment area will remove contaminants from polluted runoff and waste water.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
AIR – QUALITY		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Not Applicable	Not applicable.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Not Applicable	Not applicable.
Excessive Ozone	Neutral	There is a minimal reduction of ozone precursors through reduced surface temperatures offered by shade or ground cover, and minimal biofiltering of ozone concentrations due to interception by vegetation.
Excessive Greenhouse Gas:		
• CO_2 (Carbon Dioxide)	Slight Improvement	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
• N_20 (Nitrous Oxide)	Neutral	Not applicable.
• CH_4 (Methane)	Not Applicable	Not applicable.
Ammonia (NH_3)	Neutral	Not applicable.
Chemical Drift	Not Applicable	Not applicable.
Objectionable Odors	Slight to Moderate Improvement	Can be used to prevent need for long term storage of manure
Reduced Visibility	Not Applicable	Not applicable.
Undesirable Air Movement	Not Applicable	Not applicable.
Adverse Air Temperature	Not Applicable	Not applicable.
PLANTS – SUITABLIITY		
Plants not Adapted or Suited	Substantial Improvement	Plants selected are adapted and suited.
PLANTS - CONDITION		
Productivity, Health, and Vigor	Slight to Moderate Improvement	Treatment area will receive excess nutrients which could be toxic and diminish plant health.
Threatened or Endangered Plant Species:		

• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Not Applicable	Not applicable.
• Declining Species, Species of Concern	Not Applicable	Not applicable.
Noxious and Invasive Plants	Moderate to Substantial Improvement	Vegetation is installed and managed to control undesired species.
Forage Quality and Palatability	Not Applicable	Not applicable.
Wildfire Hazard	Not Applicable	Not applicable.
ANIMALS - FISH AND WILDLIFE		
Inadequate Food	Not Applicable	Not applicable.
Inadequate Cover/Shelter	Not Applicable	Not applicable.
Inadequate Water	Not Applicable	Not applicable.
Inadequate Space	Neutral	Area provides only limited additional space for most species.
Habitat Fragmentation	Not Applicable	Not applicable.
Imbalance Among and Within Populations	Not Applicable	Not applicable.
Threatened and Endangered Fish and Wildlife Species:		
• Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
• Declining Species, Species of Concern	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
ANIMALS – DOMESTIC		
Inadequate Quantities and Quality of Feed and Forage	Slight Improvement	There may be some use of the planting for feed and forage by livestock.
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not applicable.
Stress and Mortality	Not Applicable	Not applicable.
HUMAN – ECONOMICS		
Land - Change in Land Use	Slight	Area planted to vegetation with restricted access for original uses.
Land – Land in Production	Negligible	Small areas taken out of production.
Capital – Change in Equipment	Slight Increase.	Equipment required to install and maintain practice.
Capital - Total Investment Cost	Slight to Moderate	Materials, equipment and labor to install practice.
Capital – Annual Cost	Slight increase.	Equipment and labor to maintain the practice.
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight increase.	Remove sediment and waste and pest management.

Labor – Change in Management Level	Slight increase.	Annual maintenance required to maintain practice.
Risk - Yield	Not applicable.	Not applicable.
Risk - Flexibility	Slight Increase	Slight increase due to design criteria.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Slight Increase	Slight increase due to construction costs.
Profitability – Change in Profitability	Situational	May reduce waste mangement costs.
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight Increase	Construction impacts possible
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	Slight Increase	Maintenance of this practice requires regular cleanout.
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not applicable

Human Considerations Explanation

Considerations	Physical effects indicate:
Land - Change in Land Use	The degree to which implementing the conservation practice is expected to cause a change from one land use to another.
Land - Land in Production	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of land in production.
Capital - Change in Equipment	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of capital equipment required for farm or ranch operations.
Capital - Total Investment Cost	A qualitative measure of the increase in total investment dollars required in order to implement the conservation practice.
Capital - Annual Cost	A qualitative measure of the expected change in annual capital costs required in order to operate and maintain the conservation practice.
Capital - Credit & Farm Program Eligibility	Included to make conservation planners aware of the potential availability of funding for implementing conservation practices.
Labor – Labor	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of overall farm or ranch labor required for operations.
Labor - Change in Management Level	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of required active management on a farm or ranch.
Risk – Yield	The degree to which risk, as related to crop or livestock yields, is expected to increase or decrease as a result of implementing the conservation practice.
Risk – Flexibility	The degree to which risk, as related to the flexibility of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice. For example, converting from flood irrigation to a sprinkler system gives a farmer an increase in flexibility of irrigation, which results in a decrease in the level of risk associated with inflexibility of operations.
Risk – Timing	The degree to which risk, as related to the timing of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Risk - Cash Flow	The degree to which risk, as related to cash flow in farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Profitability - Change in Profitability	The degree to which farm or ranch profitability is expected to increase or decrease as a result of implementing the conservation practice.
Cultural Resources and/or Historic Properties Present or Suspected to be Present	The degree to which implementation of the conservation practice is expected to increase or decrease the risk of cultural resource disturbance, degradation, or loss.
Depletion of Fossil Fuel Resources	Inefficient use of fossil-originated energy sources (diesel, gasoline, propane, natural gas, coal), lubricants, and other materials.
Underutilization of Non-Fossil Energy Sources	Available and cost-effective alternative energy sources (solar, wind, biofuel, hydroelectric, geothermal) are not being used or are being used inefficiently.